“You´re supposed to interfere…”

- Conducting leadership through meaning-making in new product development

by

Kristiane Marie Fjær Lindland

Thesis submitted in fulfillment of
the requirements for the degree of
PHILOSOPHIAE DOCTOR
(PhD)

Faculty of Social Sciences
Department of Media, Culture and Social Sciences
2014

University of Stavanger
N-4036 Stavanger
NORWAY
www.uis.no

ISBN: 978-82-7644-573-2
ISSN: 1890-1387

In loving memory of dad

- a true inquirer

"It is part of life to inquire,

mull things over,

come to conclusions and make evaluations.

We do it all the time whether we are aware of it or not.

It is how we learn and become cognizant of our world

and who we are in this world."

(Elkjaer & Simpson, 2006, p. 67)

SUMMARY

In this thesis I explore how leadership is conducted through meaning-making in New Product Development-work. Leadership through meaning-making is here understood as the acts of enabling one-self and others to act competently and constructively for realizing shared goals through interactions where both meaning and meaning-makers are under continuous development.

Innovation has the last couple of decades become a buzz-word, bearing both the promise of survival and the risk of failure. Much attention has thus been placed on finding ways of reducing risk of failure and enhancing possibilities for success. The major challenge for conducting leadership in innovation processes is that as innovation processes involve both exploration and exploitation this typically demands quite different forms of leadership. Also, while existing knowledge and solutions are of decisive importance for short-term survival, one also has to break with current understandings to survive in the long run. A central focus for innovation research has thus been to find ways of handling these apparently contradicting leadership tasks for securing the need for both exploration and efficiency. The solution to this challenge has often been sought in ways of organizing the innovation processes, separating the explorative tasks from the exploitative tasks in order to conduct leadership according to the different tasks. An underlying assumption to most of these research contributions is that innovation processes are rational processes whereas human factors are input factors in line with other input factors, the outcome of the process is innovation.

This thesis questions these rational understandings of innovation-processes, by exploring New Product Development (NPD) through a relational approach where meaning and identity co-constitute one another and create direction for further development. The theoretical basis for this relational approach draws on the work of George Herbert Mead, John Dewey, Erving Goffman, Norbert Elias, and newer

contributions from complexity theory and pragmatism. The ontological basis for the study draws on the dialectical understanding of reality found in the work of Hegel, and thus questioning the dualistic understanding typical for system theory, which dominates innovation-theory. The purpose of the study is to contribute to a more comprehensive and nuanced understanding of how leadership is conducted through meaning-making, and where the conducting of identity is central for the ability to do so.

Through a qualitative fieldwork characterized by abductive reasoning, the NPD work in a company developing, producing and marketing products for professional kitchens was followed over a time-period stretching over four years. What characterized the organizing of the NPD work was that it was cross-disciplinary beyond the involvement of different disciplines and tasks. The second aspect was that the same participants were more or less involved in all development-processes in the sense that the various processes under development were handled more or less simultaneously.

Three aspects of meaning-making became central for how the NPD work developed, and thus also for how leadership was conducted through meaning-making. The first aspect was the use of physical objects for directing, exploring and expressing meaning. The second aspect was that the way participants conducted themselves in the transactions where meaning developed, also influenced on the ability to make use of the physical objects for taking the NPD-work forward. The third aspect was the fact that participants often experienced several - often contradicting yet valid – expectations to who they could be and what they could and should do in transactions with other participants. I have called these expectations for paradoxical expectations.

The conducting of leadership through meaning-making was thus about providing opportunities for developing identities where participants could perform their work tasks in a fruitful way, and directing the conduct of selves in ways that enabled the task-related work. This directing of conduct was usually guided by internalized social plays

where participants had developed an understanding of what others expected of them and how various gestures should be interpreted.

The conducting of leadership demanded both self-leadership and co-leadership by all participants. They needed to adjust themselves to the development of events and provide opportunities for one another to take necessary leadership initiatives. Although this cooperation around leadership could go for any leadership act, it became especially evident in situations where there existed paradoxical expectations of how to act. An example of a paradoxical expectation much focused on in innovation literature is the need for securing both exploration and exploitation. As exploration and exploitation demand different forms of leadership, there is also a need for enabling leadership to bridge the gap between these two forms (Uhl-Bien & Marion, 2009). In addition to exploration and exploitation, I also experienced paradoxical expectations between formal and informal expectations, between conformity and conflict and between tasks and relations.

Enabling leadership in situations of paradoxical expectations was in this study not about reducing the demand for paradoxical leadership acts, but rather about enabling paradoxical leadership acts to be conducted despite their contradicting aspects. I found mainly three strategies for coping with, enabling and even creating paradoxical expectations. The first one was to rule out one of the paradoxical aspects, usually handled by how participants conducted themselves through social plays. The second strategy was to point out paradoxical expectations as a fact and an opportunity for choosing both understandings as possible. The third strategy was actually about creating paradoxical expectations and through this make a room for acting that previously did not exist.

The thesis contributes to a deeper understanding of what we could call the “hidden work” in NPD work, or tacit knowledge. Hence, it contributes to a more comprehensive empirical insight in how the role of physical objects, identity and paradoxical expectations in various ways influence on the meaning-making, and how leadership is conducted through meaning-making. As such it can also contribute to a more empirical

understanding of what Uhl-Bien and Marion (2009) called enabling leadership, adaptive leadership and administrative leadership.

Through having studied the NPD-work as work consisting of numerous products and projects developing across and in parallel and based on with one another, the study has also contributed to a broader understanding of how products and projects are interconnected, and how this has implications for both the reasons found for developing a new product, and for the assessment of profitability in NPD-work.

It also contributes to widening the understanding of what forms of paradoxical expectations beyond the explorative and exploitative aspects participants face in their efforts of developing innovative product-solutions. The findings can also contribute to a discussion about self-leadership and co-leadership and how these actually can be two sides of the same coin. Finally; the study can contribute to more attention and respect for the relational competence and work participants need to conduct in order to enable the task-related work in NPD-processes.

Findings from the study can have implications for what and how we understand meaning-making in innovation work to be and how leadership in this work in practice is conducted. It can also have implications for how we assess the fruitfulness of differing ways of organizing NPD work. And finally, the study can have implications for a discussion regarding how we often study NPD-work and whether we actually can grasp central, "hidden" aspects of how leadership is conducted in practice by the use of quantitative tools or solely qualitative interviews.

Further research on this area is needed, both by using the transactional understanding of Mead, Dewey and Elias for exploring the role of meaning and identities in innovation-work, and for exploring how this theoretical approach relate to other related theoretical approaches. It would also be interesting to check out how the findings from this study resonate with what can be found in other companies and organizations. The study can also raise research agendas for further studies on how

profitability is assessed in NPD-work and how this influences on the decisions made in these processes.

ACKNOWLEDGMENTS

Completing a thesis demands interest, effort, sacrifices, and hard work from numerous people. Seven years after I started this work, I therefore have many people to thank for realizing this thesis.

First, I want to thank Øystein Hatteland, who made me aware of the PhD scholarship and encouraged me to apply for it, and for being my main supervisor during the first half of my studies. Thanks also to Professor Odd Einar Olsen, who took over for Øystein and with great analytical skills, courage, and trust in me gave me the freedom to pursue my ideas, while still pointing out what had to be done to take project forward. Third, thanks to my co-supervisor Carl-Cato Wadel, who pushed me out into the field and, with much encouragement and patience, listened to my experiences from the field; he taught me what fieldwork is all about. His effort and attention to detail when reading and commenting on my numerous written versions was decisive in my ability to reconsider and adjust the manuscript into its final version.

Thanks to Figgjo AS for hosting my research and for making it easy for me to conduct the fieldwork and to my contact person, Constance Gaard Kristiansen, for patiently and attentively keeping me updated about meetings, projects, and tasks and for introducing me to the various forums. Special thanks to my informants for so openly including me in their world. Fieldwork requires co-operation and through their interest, inclusion, and wisdom they led to this thesis being built on a rich, honest and broad base of empirical material.

Thanks to colleagues and friends in "the corridor" who have enriched both me and my work through discussions, help, support, and good laughs during long working days. Special thanks to Lillian Stene and Elise Olsvik for their ability to see the humor in our parallel challenges, making it possible to cope with the strains of finishing the PhD work. And thanks

to Bjørn Ivar Kruke for enriching discussions around field-work and for continuous encouragement. Also, thanks to Eric Brun for suggestions for literature, his interest, support, and good advices.

Thanks to my friends for coping with my apologies and failings in answering e-mails and my absences from most social events.

Thanks to my parents. To Dad for being my closest talking partner and always encouraging what I set out to do; he passed away shortly after I started this project. And to Mum for coping with my excuses about always being short of time and for always supporting what I do.

And finally, special thanks to my husband, Wegard. His unquestioning support, loyalty, and humor, as well as his providing me with good meals, clean clothes, and a welcoming home, made it possible for me to work as much as I have needed and wanted to in finishing this project. And thanks to Max and Fredrik for their flexibility and ability to adjust to my failings in being absent when I should have been there; they will always be the most important people in my life.

CONTENTS

LIST OF TABLES

1 INTRODUCING THE THEME, AIMS, AND RESEARCH PROBLEM

Consider innovation, a word filled with so much hope for solutions to challenges and future profitability, yet also bearing the risk of failure, loss of face, and economic disaster. The demand for developing innovative solutions and simultaneously using scarce resources as efficiently as possible has led to a focus on how to conduct leadership in innovation processes.

1.1 THE THEME

Innovation is broadly understood as the process of finding new solutions and developing them into something useful and profitable. Hence, it is not just about coming up with good ideas and developing them, but also about realizing the ideas in a market (Schumpeter, 1934). Thus, innovation processes are usually seen as having an (exploratory) development phase or "fuzzy front end" and an (exploitative) implementation phase (E. C. Brun, 2010; Kim & Wilemon, 2002). The challenge in relation to innovation processes is that exploration and exploitation must be addressed in different ways because exploration is usually more ambiguous and risky, while exploitation of innovation work often is best handled through more structured processes (Burgelman, 2002; Uhl-Bien, Marion, & McKelvey, 2007). In addition, potential conflicts exist between short-term development and long-term development in innovation processes; the innovative solutions securing profitability at the moment are also the solutions that must be abandoned to give way for more radical solutions in a long-term perspective. These challenges have often been called innovation dilemmas (Adler et al., 2009; Putz & Raynor, 2005; Quinn, 1985). While the latter of these two dilemmas is typically connected to strategic choices, the first is more related to handling innovation through ways of organizing (Mintzberg, 1996; Trueman, 1998; Zaltman, Duncan, & Holbæk, 1973)

In contrast to how innovation studies typically have focused on specific innovation processes, the focus in this study is on new product development (NPD) work more broadly. This means that I have studied NPD work related to the development of approximately eight projects and more than 120 products stretching over a time period of four years.

The differing aspects of innovation work also have implications for how to conduct leadership, as the differing aspects of innovation work do not just differ from one another; they also sometimes contradict one another. So, how is leadership in practice conducted in innovation work when such work apparently needs contradictory forms of leadership? This is the central theme of inquiry in this thesis.

Leadership can be defined in many ways; one is to focus on leadership as meaning-making (Smircich & Morgan, 1982). Two definitions that relate leadership to meaning-making are as follows:

"Leadership is the process of influencing the activities of an organized group toward a goal achievement" (Smirchch & Morgan in Yukl, 1989, p. 3) and

"leadership is the process of making sense of what people are doing together so that people will understand and be committed" (Drath and Palus, 1994 in Yukl, 1989, p. 3).

These two definitions highlight the centrality of meaning-making for creating a clear direction in work, and thereby enabling participants to develop relevant expectations for how to take the work processes forward.

In this thesis, I focus especially on leadership as enabling participants to perform their tasks through meaning-making. One form of enabling participants to do their tasks is to provide an understanding of the goals. However, another form is to provide alternative understandings of a situation, thereby opening up to alternative solutions. Abilities and constraints for contributing to achieving shared goals can also be connected to relational aspects, meaning a reinterpretation of situations

and relationships that make it possible or difficult for participants to take part in the work in a fruitful way, due to relational obligations and expectations. Relational aspects of meaning-making and leadership are to a lesser extent taken into consideration in innovation theory, as the focus has typically been on task-related work. However, as I will draw attention to in this thesis, task-related work also has relational aspects. Hence, the ability to perform the work in ways that appear to be sensible for taking the innovation work forward can be constrained by relational considerations. Failing to take relational considerations into account is not an option, as we are not free to do whatever we want and still stay in the relationship (Elias, 1939; Griffin & Stacey, 2005). By understanding meaning-making as a social process where both meaning and meaning-makers are under continuous development (Mead, 1932, 1934), I will explore how leadership is conducted in – and through – meaning-making in innovation work.

The empirical basis for this thesis is a case study focused on meaning-making in innovation work. Through extensive fieldwork stretching over four years in a company developing new products, I followed the development of numerous products, projects, and development processes in parallel, in succession, and across processes. When I focused on leadership in the NPD work, I was mainly concerned about developing direction and a shared understanding of what to do, questioning existing assumptions, and providing possibilities for conducting the necessary tasks in situations where there were norms and expectations for what to do and how to behave.

During the fieldwork, three themes emerged as central in meaning-making through which leadership was conducted: the role of physical objects in exploring meaning, the role of identities in meaning-making, and the handling of paradoxical expectations of how to act. Much of the meaning-making in the NPD work involved determining what products could be and what projects should be about. Physical objects came to be central as tools for exploring meaning in the NPD work. Through the study, it also became clear that the way participants conducted themselves in interactions influenced their ability to explore the more

task-related meaning-making. However, as pointed out in the innovation literature, innovation work is about living up to contradictory goals by focusing on short-term profitability, while still exploring ways to secure long-term survival. These often contradictory goals can easily lead to paradoxical expectations for how to interpret and respond to a situation. However, in the work I followed, paradoxical expectations also emerged between formal and informal understandings, between conformity and conflict, and between relational expectations and task-related expectations. Leadership was often about handling these paradoxical expectations, and this could imply administrative, adaptive, and enabling leadership (Putz & Raynor, 2005; Uhl-Bien & Marion, 2009; Uhl-Bien et al., 2007), as well as self-leadership (Manz, 1996; Uhl-Bien & Graen, 1992; C. C. Wadel, 2006) and co-leadership (Schou-Andreassen & Wadel, 1989; C. C. Wadel, 2012), to realize leadership through meaning-making.

In this chapter, I will provide an overview of the dominating innovation approaches and the central leadership dilemma connected to innovation work, how others have addressed these challenges, and what appears to be lacking in the existing research. Furthermore, I will point out what the aim of this study has been and how the research problem and research questions were formulated. I start by addressing the understanding of innovation work more generally.

1.2 SOME APPROACHES TO INNOVATION

Society is increasingly focused on innovation as the solution to anything from climate challenges to challenges associated with market globalization. However, just as innovation is seen in numerous ways as the solution to sustainability, it also entails huge economic and strategic risks (Harkema, 2003). A main theme in innovation research has thus been how to enhance innovation success and reduce its risks. Innovation research is historically based in economic theory (Penrose, 1959; Schumpeter, 1934) and in management perspectives (Cooper, 1993) with roots in the work of Frederic Taylor (1911).

One approach has been to identify the resources, scarce, valuable, and un-substitutable, for realizing innovation (Penrose, 1959). From focusing on raw materials and the need for financing (Barney & Arikan, 2001), new themes such as the importance of relationships (Alvarez & Busenitz, 2001; Granovetter, 1973; Rost, 2011) and the importance of clusters or geographic regions have become more central (Gilbert, 2012; Hsieh, Lee, & Ho, 2012). Another approach has been to focus on the nature of innovation processes, how they must be handled in different ways in differing phases (Aldrich, 1999) and how differing forms of innovation need to be handled differently (Burgelman, 2002; Lester & Piore, 2004; Verganti, 2006). Innovation dilemmas have also been studied in relation to how to simultaneously address apparently contradictory tasks that need differing approaches and leadership (Cardona, 2000).

Although there are different aspects, approaches, and focuses in the various contributions, they are mainly based on variations of system theory. The main focus is on how we can enhance success and reduce the risk of failure by identifying the factors necessary for a more successful outcome. Both actors and structures are focused on, often with an emphasis on how these factors influence one another. The problem appears to be that the approaches have traditionally been far too rational. A typical example of the rational focus in the innovation literature is Cooper's (1993) stage-gate model, where the new product development process is assessed and defined in detail at the outset and specific criteria at specific gates for the prospective product are predefined. Tools for setting these criteria are existing product successes and a focus on "best practices." Both existing products and references to procedures defined as best practices can be useful for defining a new product. The impact of using physical objects such as prototypes to create clarity, direction, and shared meaning has also been emphasized (Engwall & Westling, 2004; Ewenstein & Whyte, 2009). However, are innovation processes really as rational as Cooper makes them out to be? Critics of stage-gate models have claimed that they focus only on development of incremental innovations (Khurana & Rosenthal, 1998; Takeuchi & Nonaka, 1986). Also, although organizations must use their existing competence and developed solutions to survive in the short term, they also need to seek

innovative solutions that often radically break with their current activities. The challenge is that the short-term innovations, as incremental innovations based on existing knowledge, usually can be managed relatively efficiently through administrative leadership (Burgelman, 2002; Lester & Piore, 2004). In contrast, radical innovations, as innovations radically breaking with existing knowledge, usually require adaptive leadership, which questions and challenges existing understandings so as to move forward (ibid.). The dilemma then becomes: How is it possible to conduct leadership when what is good for short-term survival appears to inhibit survival in the long term and vice versa, and when some parts of the development process need adaptive leadership while others parts are best served by administrative leadership?

I will present some main approaches to conducting leadership in these innovation dilemmas. Although these approaches have more or less the same understanding of the dilemmas, they appear to have different angles on the understanding of why the dilemmas emerged, which again can lead to slightly differing solutions to the dilemmas.

1.3 LEADERSHIP STRATEGIES FOR HANDLING THE INNOVATION DILEMMAS

The innovation dilemmas leads to a leadership dilemma: How is it possible to conduct administrative leadership while also conducting adaptive leadership? The short answer is that several participants must conduct leadership. I will point out two approaches to understanding why there is a need for several people to conduct leadership, one being an understanding of knowledge organizations, the other a focus on radical and incremental innovations.

In knowledge organizations – as increasingly more organizations are now understood – leadership tasks are more concerned with creating possibilities for knowledge transfer, learning, and innovation than instructing people on their work-tasks (Uhl-Bien et al., 2007). In such organizations, the role of the leader is more that of a coach and mentor,

creating possibilities for learning and exploration and providing care, attention, and room for emotions (Bertels & Savage, 1998; von Krogh, Ichijo, & Nonaka, 2001). Hierarchies are broken down into "flat structures"; the work becomes more specialized and the employees increasingly lead themselves in their tasks. Leaders become discussant-partners, networkers, legitimizers, and providers of necessary resources. "The relational leader" has been given this understanding of the leaders' role (Skivik, 2004). As employees in knowledge companies are often specialized, perhaps experts in their field, they may have better insight into their work than their formal leaders and thus often need to lead themselves and their work (Rylander & Peppard, 2003; C. C. Wadel, 2006). They also need to conduct leadership in relation to others in informing and adjusting their work to the work of others. Another important leadership task, seen as especially vital for innovative organizations, is the task of questioning existing solutions and ways of working, often called adaptive leadership. This is also seen as a leadership task that others than formal leaders need to take on (Uhl-Bien & Marion, 2009). Hence, in knowledge organizations, both leaders and followers must take leadership responsibility, on their own and together with others. Nevertheless, administrative versus adaptive leadership tasks often conflict with one another, making it necessary for a mediator to bridge the gap between the conflicting leadership roles, as both are necessary for conducting the work in knowledge organizations (Uhl-Bien et al., 2007).

Another approach to this understanding of several people needing to take leadership roles, especially in innovation processes, is found in an evolutionary perspective on innovation. Innovation processes are seen as involving various phases (Aldrich, 1999) where each phase is handled differently. The same goes for incremental innovations and radical innovations, where incremental innovations can be handled by analysis while radical innovations need interpretation (Lester & Piore, 2004). In addition, just as technological innovations need analysis, design-driven products need interpretation (Verganti, 2006). Incremental innovations are consistent with current strategy and are most efficiently handled by administrative leadership conducted by formal leaders (Burgelman,

2002). Radical ideas lying outside the current strategy need intrapreneurs to develop them through bottom-up processes. Here, the intrapreneurs conduct adaptive leadership by exploring alternative solutions. However, as the radical initiatives are not aligned with current strategies and goals, the intrapreneurs need middle managers to champion the radical ideas through the "system" and to protect the intrapreneurs in their work (Burgelman, 2002) .

The leadership challenges of the innovation dilemma have mainly involved attempts to solve them through organizing. The main focus has been to separate incremental development work from radical development work and development work from implementation work (Adler et al., 2009; O´Connor & DeMartino, 2006). In this way, it is possible to conduct differing forms of leadership in different teams, tasks, and departments. A weakness of these approaches is that they usually understand innovation processes as autonomous processes in which it is possible to perceive at the outset whether a product or project will develop into something incremental or something radical. In practice, it can be difficult to prescribe how development processes will grow. Likewise, meaning-making in one development process will often influence and be influenced by meaning-making in other development processes.

Just as the complexity of the intertwining between exploration and exploitation and between the various development processes is often under-communicated, an awareness of the complexity of human conduct also often appears to be lacking in these approaches. That is not to say that human aspects of innovation work do not receive emphasis (Buijs, 2007; Ellonen, Blomqvist, & Puumalainen, 2008; Quinn, 1985), but rather that the possible co-constituting dynamics of innovation makers and innovations are hard to grasp when the focus is on input factors and output factors, where a more or less strong causality is indicated.

In this thesis, I argue for understanding innovation processes as developed through and directed by meaning-making, where this meaning-making is developed by human beings through interaction. A

relational approach, as I will more fully sketch in chapter 2, can provide an understanding of reality where both meaning-makers and meaning-making co-constitute one another. This provides broader insight into how human aspects of innovation processes are not just input factors but are also products of meaning making. The relational dynamics of meaning-making can be the core to innovation development. This can provide a better understanding of how relational dynamics are part and parcel of innovation work.

I will now provide insight into a relational approach to innovation to better express the research focus of this thesis, the main research problem, and the research questions.

1.4 TOWARD A RELATIONAL APPROACH TO INNOVATION

An approach taking in the relational and process aspects of meaning-making and leadership in NPD work opens up for an understanding of reality where both stability and change can be the possible outcome of any situation (S. O. Johannessen, 2009; Simpson, 2009; Stacey, 2003). In addition, meaning-making has both task-related and relational dimensions (Mead, 1934; Schou-Andreassen & Wadel, 1989; C. Wadel, 1999).

Most theories in the innovation literature understand innovation processes as more or less rational. They are understood as processes detached from the persons developing them. Choices underway are based on objective, task-related factors embedded in economic principles. There is significant focus on causality, where the innovation output is the dependent factor. Determining which input factors lead to the wanted output thus becomes central. The difference between taking a relational approach and a rational approach to understanding innovation is that a relational approach sees meaning-making and meaning-makers as co-constituting one another through interactions (J. Aasen, 2008; Brinkmann, 2006; Mead, 1934). This means that participants in innovation processes do not just influence the development of the processes, but the development of events also influences who the

participants become. Identity and relationships thus become part of the meaning-making (T. M. B. Aasen, 2009). This makes the idea found in system theory of dependent and independent variables problematic, as any "variable" in the interaction can just as well be reinterpreted and reproduced in any situation.

A relational understanding of innovation work thus implies that relational aspects, such as trust, learning, and conducting identity, are not just taken in as input factors for meaning-making, but understood as part of the meaning-making. Hence, we cannot separate the task-related work from the interactions through which it develops. As both participants and the task-related work are under continuous reinterpretation, the ability to act is also an ability that emerges through the interactions.

Now, how can such an approach influence, for example, the understanding of physical objects, such as existing products and prototypes? First and foremost, we cannot understand products and physical tools as one dimensionally as Cooper (1993) did. We find more nuanced understandings of how physical objects also can be tools for developing meaning, not just the results of meaning-making (Ewenstein & Whyte, 2007a, 2009), but the focus is still mainly on the objects as such, and little information is available about how this influences the participants as identities. Nevertheless, some contributions focus on how physical objects can also have different meaning in different situations and different communities (Brown & Duguid, 2001; Kleinsmann, Valkenburg, & Buijs, 2007). Best practices might also have social aspects (Kleinsmann et al., 2007) just as other work habits and procedures can be embedded in social conditions, as well as strictly task-related considerations (C. Wadel, 1999; C. C. Wadel, 2007).

What participants will, can, and should do in a situation is thus not just dependent on task-related aspects, but also on the relational possibilities (Ottesen, 2011). Innovation work, just as other work, is interdependent, meaning that participants need to adjust their actions to the situation to contribute to the realization of the work (Elias, 1939). The relational aspects of task-related work are typically learned through being

socialized into the work community(Brown & Duguid, 1991, 2001). This enables participants to conduct self-leadership and self-control in their work and in situations where they work alone (ibid). The interdependent aspect is seen in the future-oriented imagination of what response prospective acts can evoke in others (Mead, 1932, 1934). Leadership in innovation work is thus conducted in a social reality where leadership acts need to be conducted in a way that others will accept as legitimate, relevant, and right. The challenge of exercising leadership in innovation processes has been the primary focus in relation to innovation dilemmas. These dilemmas can lead to participants developing paradoxical expectations in relation to how to act and conduct leadership to realize innovations. Again, as meaning and meaning-makers co-constitute one another the conducting of leadership must also be connected to identity. This aspect will be fully addressed in chapter 2.

To sum up, a relational approach to the understanding of meaning-making and leadership in NPD work can open up for interpretations and understandings of the work other than the contributions I have presented in sub-chapters 1.1 and 1.2. However, these contributions have given rise to agendas that I have tried to explore and challenge through a relational approach.

I propose that there is a form of relational work in the innovation-work that we know little about, but that is imperative for taking the work forward. The aim of this study is to contribute to a more comprehensive empirical understanding of innovation work by drawing attention to this "hidden work". We as outsiders might know very little about this hidden work, and insiders might take it so much for granted that it is difficult for them to notice or express it. I have aimed to provide insight into how leadership in NPD work is about directing and developing meaning and how identity is both a factor in this meaning-making and the result of this meaning-making. This knowledge can contribute to a more realistic and nuanced understanding of how NPD work develops and the impact relational aspects of meaning-making can have on what is often seen as "rational" processes that are developed independent of the social processes through which they develop.

1.5 SPECIFYING THE RESEARCH PROBLEM AND LIMITATIONS

The fieldwork conducted for this study was characterized by abductive reasoning, implying themes, focus, and a theoretical basis for what empirical material to see as relevant, reconsidered through numerous rounds. This process has been called *"a dance between theory, method and observations"* (C. Wadel, 1991, p. 129). This also implies that the main research problem is more the result of this "dance" than an initial research problem that has been strictly held onto throughout the process.[1]

The research problem is formulated as:

How is leadership conducted through meaning-making in new product development work?

In this problem formulation, there is an implicit assumption that leadership is conducted through social processes where both meaning and identities develop. This assumption is based on observations and interpretations from the field and guided by a relational understanding of reality.

Meaning-making and identity through the whole process have been the main pillars of the project. Leadership was one of the themes developed underway, but it became strange to single it out as a special theme because it was present in various ways in all the empirical material. I say "leadership conducted" because the focus has been on leadership *acts*, rather than on "leaders" – whether formal or informal. I have focused on the conducted leadership acts and how they contribute to take the participants and their work tasks forward toward a shared goal. A leadership act is here defined as an act conducted by an individual that influences the development of events. In addition, to conduct a leadership task, participants often need to contribute with complementary leadership acts.

1 A fuller account of abductive reasoning and the practical development of focus, research problem, and research questions is given in Chapter 3, Methodology.

When I focus on leadership conducted *through* meaning-making, it is because leadership will always be embedded in and express some form of understanding of reality and a direction for further work, either directly or indirectly. The conducted leadership acts can thus influence meaning development. However, meaning development can also call for specific leadership acts to be conducted in a given situation. These two aspects of leadership and meaning-making are not separate as two different themes, but rather intertwined in practical work.

1.5.1 DEVELOPING RESEARCH QUESTIONS

The use of physical objects, the role of identity, and the experience and handling of paradoxical expectations became central in the study of conducting leadership in NPD work. However, before I can focus on how leadership is conducted, I need to address meaning-making in NPD work because it is through meaning-making that leadership is exercised. I will now describe in what order I will address the various themes and how I see them as connected to the main research problem. This is illustrated in Figure 1.

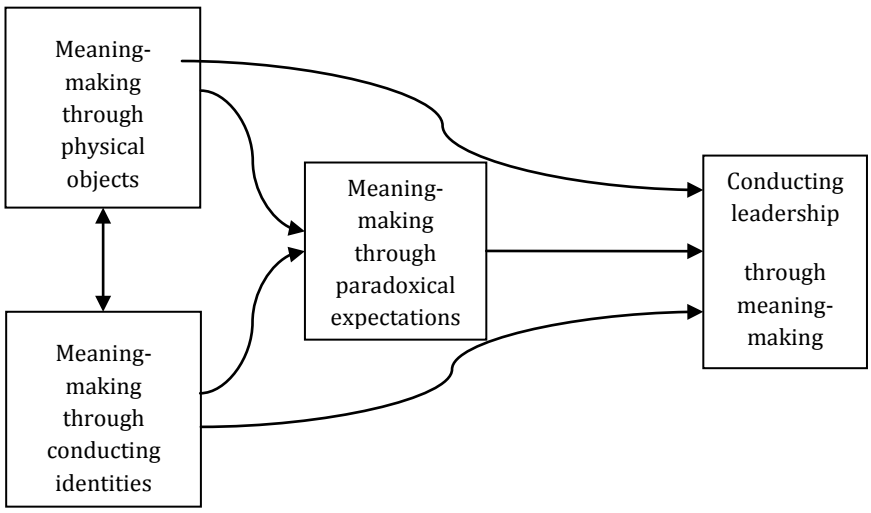


Figure 1. The connections among meaning-making and physical objects, identities, and paradoxical expectations and leadership conducted through meaning-making.

I start by addressing how physical objects are used to direct and explore meaning in NPD work because this theme is prominent in the NPD literature and relatively easy to comprehend. The second theme focuses on how identities are conducted and how this influences and is influenced by task-related meaning-making. Meaning-making related to physical objects can lead to paradoxical expectations about how to go further because the meaning of physical objects need not be universally recognized. The same goes for identities; our understanding of ourselves and others in a situation can lead to paradoxical expectations of how to act. Meaning-making in relation to physical objects and the conducting of identities can create situations of paradoxical expectations. Finally, when I have addressed these three themes in relation to meaning-making, it is time to discuss how these various aspects need leadership and how the various leadership tasks are interconnected. Because leadership is conducted in transactions, in the empirical chapters (chapters 5, 6, and 7) I will focus on meaning-making in relation to these three themes. The research questions are as follows:

1. How do physical objects play a part in meaning-making in NPD work?
2. How does identity play a part in meaning-making in NPD work?
3. How do paradoxical expectations play a part in meaning-making in NPD work?

Addressing these research questions represents the empirical basis for discussing how leadership is conducted in NPD work. This discussion is presented in chapter 8.

1.5.2 LIMITATIONS

Some limitations need to be pointed out. First, I have not studied the whole and full story of any NPD process from A to Z. Rather, I have studied the NPD work consisting of numerous products, projects, and processes over four years. The study is thus more about the flow of meaning across development processes and work tasks connected to

NPD work than about uncovering the "full truth" about one or a few processes.

The main aim of this study has been to contribute to a more comprehensive understanding of how NPD-work in practice develops. As such this is first and foremost an empirical study.

I have studied the social interaction in NPD work and how relational aspects and task-related aspects of the emerging meaning appear to co-constitute one another. This means that I have not focused on personal traits and abilities as individual assets. However, personal traits can influence how people conduct themselves in social interactions, so to some extent these traits are not ruled out of the study. To the extent that it has been an issue, the focus has been more on how these traits have influenced meaning-making than what the traits are.

Likewise, I have not focused on how the NPD work has been organized, at least not as an answer to why things developed as they did. However, the organizing of tasks has had an impact on who has taken part in the work, the arenas for interaction, and possibly also for how the NPD work has been understood in the company. Even so, again, organizing, just as personal traits, has only been interesting to the extent that it has influenced the meaning development, with an emphasis on how rather than what.

Also, I have not focused on the output of the NPD work in terms of whether this is a more profitable way of organizing the NPD work. Nor have I compared my findings in the NPD work I followed with other ways of conducting the work.

Finally, this is not a study of incremental or radical innovations or technical or design-driven innovations. As I will show in the empirical chapters 5, 6 and 7, the division between radical and incremental innovations has become so complex that it is almost meaningless to label the products in terms of incremental or radical. Second, although the NPD work I followed probably would be characterized as typically design-

driven product development, there is always a technological aspect to any product in terms of how to produce it.

1.6 OUTLINING THE STRUCTURE OF THE THESIS

Through the next eight chapters, I aim to provide insight into why these three themes – physical objects, identities and paradoxical expectations - were of special interest to how leadership was conducted in the NPD work I followed and why this relational approach as a tool for exploring meaning can draw attention to aspects of leadership that have been less focused on. The next eight chapters are structured as follows:

In chapter 2, I outline what I mean by taking a relational approach, first in general and then specifically for the understanding of leadership.

In chapter 3, I start by positioning the ontology of the relational approach I described in chapter 2, with special emphasis on how this differs from system theory, as this is the dominating ontology in the innovation literature. Furthermore, I elaborate on the epistemological consequences of my ontological positioning. Finally, I provide a practical description of how the study was conducted and my reflections about it.

In chapter 4, I present the context of the NPD work I followed.

In chapters 5, 6, and 7, I present the empirical material of meaning-making in relation to physical objects, identity, and paradoxical expectations, followed by discussion of how this can be understood from a relational approach.

Based on the empirical material and the discussions from chapters 5, 6, and 7, in chapter 8 I discuss how we can understand leadership conducted in relation to the three themes and in relation to what others have said about leadership in NPD work.

In chapter 9, I summarize the findings and reflect on possible contributions, implications, and suggestions for further studies.

I start with addressing the theoretical basis for a relational approach to reality.

2 TAKING A RELATIONAL APPROACH TO REALITY

In this chapter, I elaborate on what I introduced in chapter 1 as a relational approach for the theoretical basis of this thesis. I will discuss the main principles for such an approach to understanding reality. The two central themes are the connection between meaning-making and meaning-makers and an understanding of the past and expectations for the future as realized in the present. This theoretical understanding provides possibilities for understanding stability and change as potential outcomes in any situation. It also lists implications for a relational and embodied understanding of creativity, learning, and knowledge. Finally, the co-constituting aspect of meaning and meaning-makers implies relational aspects of the task-related aspects. These theoretical understandings form the basis for exploring how leadership is conducted through meaning-making in innovation work. However, as leadership is a broad term that can have many definitions, I will address how leadership can be understood from a relational perspective and draw parallels to what others have said about leadership in innovation work. Finally, based on the relational approach presented in this chapter, I will suggest how this perspective can be used to explore the research questions' themes and thereby also the research problem.

2.1 A RELATIONAL UNDERSTANDING OF REALITY

The relational approach sketched in this thesis is mainly based on the work of Mead (1932, 1934), Dewey (1934, 1938), and Elias (1939), but also on newer contributions such as Elkjaer and Simpson (2006), Simpson (2009), C. Wadel (1999) and C.C. Wadel (2007) and contributions from complexity theory (T. M. B. Aasen, 2009; S. O. Johannessen, 2009; Stacey, 2003, 2007). Two main ideas are central in this relational understanding. The first is the understanding of meaning and meaning-makers as co-constituting one another, here labeled as "transactionality" (Dewey in Bale & Bø-Rygg, 2008). The second aspect is the temporal understanding of time where both the understanding of the past and the expectations for the future are realized in the present. I will

start by addressing the main parts that constitute a transactional understanding of reality in this thesis.

2.1.1 MEANING DEVELOPMENT THROUGH TRANSACTIONS

A transactional understanding of reality goes back to the work of Dewey (Bale & Bø-Rygg, 2008; Brinkmann, 2006), but it also has strong parallels to the work of Mead (1932, 1934). Transactionality means that we do not just influence situations, but situations also influence us and who we become. What we do and who we become are thus dualities of the same meaning-making rather than dichotomies. To explain this more thoroughly, I will discuss what constitutes the Self or identity, how meaning is developed in transactions, and what the transactional process of developing meaning means in practice. Following this, I will elaborate on how the development of Selves, the internalization of social plays, the development of experiences, and habits contribute to guiding our expectations to the development of meaning. I start with the understanding of Self and how it develops.

2.1.1.1 Development of Self

In the development of Self, Mead proposed that the Self consists of two parts, the subjective I and the objective Me. The subjective I can be understood as our impulsive and creative ability to act. Mortensen describes the I as follows: *"It emerges in the present and offers suggestions that allow the individual to adjust actions to the new circumstances, conflicts and interruptions in interaction with others"* (my translation) (Mortensen, 2000).

While the subjective I can be understood as the inner drive to action that we are born with, the objective Me develops through transactions. By taking part in transactions, we learn how to behave in various situations, both more specific forms of conduct in relation to specific situations and more general conduct for everyday life. We thus learn what the appropriate response to a certain gesture could or should be. Through being socialized into groups and communities, we develop an

understanding of various social plays, where certain roles, scripts, and requisites constitute the development of the play (Dewey, 1938; Goffman, 1959). The social plays also make it possible for us to have relevant expectations for the development of events.

These "scripts" for appropriate behavior must not be understood as fixed, although they can be relatively stable in the form of habits. There is always the possibility for reinterpretation and change due to the meaning developing in the situation. Different groups, environments, and sub-cultures and relations will also have differing understandings of appropriate behavior. This means that when we take part in a new group we need to learn "how things are done here" to participate in a meaningful way. Also, when we interact with the same people, but where the situations change, the scripts can also change. Often this has to do with changing roles within the same relationships. I will come back to this later. The difference between a rational and a relational understanding of reality is in essence this transactional dimension. It is taken into account in relational understanding, but not in rational understanding.

2.1.1.2 The process of gesture-response

Mead (1934) saw the development of meaning as the social process of gesture-response, where the development of meaning and the development of selves co-constitute through the same process. The social process of developing meaning through gesture-response implies that the meaning of a gesture, such as an utterance, event, or act, is not meaningful in itself. It is by holding the gesture together with the response it evokes in others that the act becomes meaningful. Mead (1934) called the social process of gesture-response "The Social Act." In any social act there will be gestures and responses. One´s response to a foregoing gesture will be the gesture to which the other responds. In this way, the participants influence the meaning development, but no one alone controls the meaning development. Through our transactions *in* the world, we not only influence the world, but the world also influences

us and who we understand ourselves to be in relation to the world (Brinkmann, 2006).

This understanding also links to Wadel (1999) and to how any task-related act usually also has a relational meaning. The response we get to our task performance enables us to interpret who we are and possibly can be. There must be congruence between the task-related message and the relational message to achieve meaningful and consistent understanding. This means that our response to a given gesture also depends on whether we accept the gesture-maker´s "right" to make the gesture. Additionally, through our response to the gesture, the gesture-maker can see how the gesture is understood, as well as who the others then understand the gesture-maker to be. Hence, identity and relationships are not stable entities, but together with meaning are in the constant process of *becoming* (Bale & Bø-Rygg, 2008; Brinkmann, 2006). It is not our "whole" identity that is under constant reinterpretation, but rather the Me´s active in the specific transaction that can be reinterpreted.

In our efforts to make a gesture in a way that evokes a response consistent with the meaning we want to convey, we must assess what possible responses a prospective gesture might receive. As there are relational as well as task-related aspects in the gesture, this also implies having expectations for who we and the others responding to the gesture can be and become in the situation. The practical implication of a relational understanding of reality is that task-related work also needs relational work to be realized.

I will now address how the internalizing of Me´s in relation to groups, specific individuals, and communities more generally can help us navigate our performance of gestures and responses to others' gestures. Furthermore, I describe how the development of significant symbols within groups and communities can enable us to try out responses to prospective gestures through inner discussions before we make the gestures outwardly.

2.1.2 *SIGNIFICANT SYMBOLS AND THE DEVELOPMENT OF ME´S AS NAVIGATION TOOLS IN MEANING-MAKING*

Through transactions, we learn, develop, and also reinterpret patterns of interaction. This also enables us to develop shared understandings not only of how to behave in certain contexts and situations but also how to develop a meaningful understanding of various events and phenomena. Mead (1934) called forms of shared understanding in relation to specific phenomena "significant symbols," which can develop as shared understanding of how to relate to a specific situation. Developing a shared understanding of, for example, the act of taking part in a dinner party or giving a lecture enables us to respond to the event even before it has occurred by, for example, assessing what to put on when dressing for the dinner party or what examples to use in the lecture to illustrate the theory.

Through being socialized into certain groups, we develop the ability to "take on the attitude of others" also when we are alone. In other words, we develop the ability to interpret a situation or event through the perspective of the group and manage to see ourselves through the eyes of others. When Mead (1934) stated the "Me" objective, what he pointed at was this ability of the individual to take on the attitude of others toward oneself in relation to a situation. The attitude of others need not be specific others, but can also be the perceived reactions from society in general. Mead (1934) called this ability *"taking the attitude of the generalized other."* Social acts contain two parallel conversations, the outer and the inner conversation. The outer conversation comprises the gestures and responses we can observe as participants. Parallel to the outer conversation, we – as participants – also lead inner conversations with ourselves, taking the attitude of others and thus trying out our gestures and the likely responses they will evoke in others before uttering them aloud. Such inner conversations usually go on continuously as we reflect on what we experience. This also enables us to carry with us the ideas, attitudes, and gestures of others in various situations, giving us the ability to see the situations through the eyes of others.

The ability to take on the attitude of others in situations also brings with it a form of social control. By having internalized relevant expectations of what others expect of us and what we can expect of others, we can adjust and control our own behavior. Over time, we develop patterns of interaction in line with our understanding of what are appropriate gestures and responses in the various situations. As these patterns of interaction come to be relatively stable over time, they can develop into habits. Habits also have a preserving effect on meaning-making, making it easier to respond to certain gestures without much conscious consideration.

Significant symbols are thus important for enabling us to develop relevant expectations as to the development of events and how we are expected to act in these events. Thus, developing significant symbols in relation to something is an influential way to exercise power. However, as significant symbols are developed and acted on in a social reality, this also shifts the understanding of power from individuals to relationships.

2.1.2.1 A relational understanding of power

A relational understanding of power is characterized by inter-dependence and is closely connected to identity. Although the participants act intentionally, the meaning of their acts depends on the response they evoke in others. Drawing on Elias (1939), one cannot do whatever one wants and still stay in the relationship. This can imply that not just the act, but also the conducting of identity is under constant negotiation. The ability to evoke the wanted response in others to a prospective gesture depends on having relevant expectations of how others will respond (Mead, 1934). This interdependent aspect of gesture-response aligns with my understanding of power from Elias (1939). Lonnie Athens (2002) criticized Mead for not taking into account the aspect of dominance in his work. The power aspect is present in Mead's work, but the understanding of dominance from Athens (ibid.) is too static in its form. Hence, only to a small extent has Athens taken in

how Mead (1932) saw temporality[2] as stability and change as part of any situation.

Being able to take on the attitude of others to prospective gestures and developing a shared understanding of significant symbols can enhance the influence of one's gestures. Having developed Me´s in relation to many groups and being able to determine what Me to activate in the specific situation thus makes it easier for others to accept the gesture as valid. Power and legitimacy can also be found in the ability to adjust oneself to the situation by adjusting to the signals given. Empowering others in transactions can thus be about providing possibilities for reinterpreting identity and relationships in a way that makes a previously unthinkable gesture thinkable and even doable.

As both meaning-making and meaning-makers are in the constant process of becoming, expectations of the future are also under constant reconsideration. Situations will never repeat themselves exactly the same way for the simple reason that our experiences have developed over time. This brings us to the understanding of temporality.

2.1.3 MEANING-MAKING AND TEMPORALITY

Social acts will always be situated in time. A dominating understanding of time is a linear understanding, where the past is known, the present unfolding, and the future unknown. Mead (1932) saw this differently. He proposed that both our understanding of the past and our expectations for the future are realized in the present moment. Through the social act, both meaning in relation to task and in relation to who the participants in the situation understand themselves and the others to be evolves. As Simpson (2009) expressed it, *"(Mead) saw sociality as more than mere succession of transactional moments; it also involves the continuous narration of unfolding social selves"*. Hence, social acts cannot be understood as separate from the meaning-makers interpreting them, as the process of realizing the past and possible futures in the present also involves the social process of becoming selves.

2 I will address temporality in 2.1.3.

This development of meaning also leads to a possible reinterpretation of our previous understanding of the past and our expectations of possible futures. This also implies that both the previous understanding of the past and the previous understanding of selves can change through the present, also leading to other understandings of possible futures and possible selves. This constant reinterpretation of reality as a response to what we experience is expressed as follows: *"Actors located between the past and the future are obliged to reconstruct their histories in order to understand their present transactions"* (Simpson, 2009, p. 1338). As we will see, this is also the core of creative action.

Over time, we develop habits in our transactions. Our understanding of reality, of who we are and who others are, and our expectations of how others' respond to our potential gestures are often confirmed. There is a form of stability in our transactions, much due to our developed habits. Habits simplify our lives and our transactions. By transacting guided by our habits, we do not need to assess every aspect of every situation. We act as we usually act, more or less automatically, unless something unforeseen happens that make us reconsider both our understanding of the situation and what we need to do to handle it.

Experience in our daily talk is often understood as lived practice and something radically different from theory. Theory has often been understood as something learned through education and various forms of teaching. Theory is usually connected to thoughts and reflection, while experience is connected to lived practice. Dewey (2008) saw theory and practice as just two different forms of practice (Brinkmann, 2006) and both as being part of our experience. Lived practice and our reflections on this lived practice are the basis of experience. Building on the work of Dewey, (Brinkmann, 2006) described experience as *"… a form of transaction, as Dewey called it, a process of life that evolves in time where the past connects to the future and where we increasingly master the alterations of the world"* (my translation). In other words, what we experience and what we reflect on in relation to this experience give us both an understanding of the past and expectations for the future (J. Aasen, 2006). Our experience is thus vital for our development of the

generalized other and thus for acting adequately and purposefully in the situation. Discussing experiences with others is in itself an experience, as also reading and writing can be. Reading a book is not just about reading the text; it is also about relating to the text, reflecting on the phrasing, and holding the story together with our understanding of reality and who we are in this reality. When we hear people say that a book changed their lives, it wasn´t the book that acted, but the experience the reader had in responding to and reflecting on the book.

2.1.3.1 A relational understanding of creativity

Sometimes the development of events is not consistent with our expectations. Unforeseen events make it difficult to make sense of what happens. In such situations, we need to reassess our understanding of both reality and ourselves to make the events meaningful. Dewey (Brinkmann, 2006; Elkjaer & Simpson, 2006) called such situations "inquiries." Inquiries are situations where our previous understandings of reality do not add up with what actually happens. In such situations, we can take creative action.

A relational understanding of creativity is embedded in the social. It is by engaging with reality that individuals can experience situations that lead to inquiries. In such situations, the Me´s are not of any use; it is the I that must take over. Creativity is thus connected to the agency of the I and is the spontaneous response to an "impossible" situation. As Elkjaer and Simpson (2006, p. 11) expressed it: *"The 'I' is the explanatory tool that actually undertakes the experimental actions of inquiry…The 'I' and the 'Me' are thus in a continuous interplay that generates meaning through action."* In other words, the I takes over when the Me cannot provide a meaningful response. However, the exploratory actions of the I also lead to reinterpretations of the Me. Creative agency is thus not a skill, but the spontaneous response of the individual to a socially embedded situation where internalized understandings of reality and identity do not coincide with what happens. Thus, creativity is activated by our embodied experience with a social reality and is not an intellectual activity separated from the social.

Another aspect of this relational and embodied understanding of creativity that is also in contrast to the more common understanding of the creative elite was proposed by Brinkmann and Tanggaard (2010). They suggested that creativity is also found in craftsmanship and hard, engaged work: *"The basis for creativity is not flexibility in a vacuum or simply 'thinking outside the box', but is found in the ability to 'dig deep' within a particular field, which requires considerable time and hard work. The implicit values of craftsmanship that point to virtues such as working hard and staying with the same are not in opposition to creativity, but conditions for its realization"* (Brinkmann & Tanggaard, 2010, p. 252).

This understanding of both stability and change as possible outcomes of any situation also contradicts the more dominant understanding – here represented by Weick (1995) – that sees stability as the normal situation and change as the exception, leading to instability for a period before the situation is brought back to stability. The understanding of temporality that I have presented here is also in contrast to the temporal understanding of Weick that is primarily concerned with the past as the basis for sense-making (Mintzberg, Ahlstrand, & Lampel, 1998). The meaning-making of Mead (1932) is oriented toward the future and our expectations of it.

2.1.4 SUMMING UP A RELATIONAL UNDERSTANDING OF REALITY

A relational understanding of reality has at least two important implications for the understanding of how meaning develops and for the understanding of how leadership is conducted. First, we cannot separate the development of meaning from the development of meaning-makers, implying that the meaning and meaning-makers continuously co-constitute one another. In addition, as meaning develops through the social processes of gesture-response, no one alone directs the development of meaning. This expresses a relational understanding of power as embedded in transactions rather than as an individual asset.

The other important implication is that both the past and the future are realized in the present moment, implying that in any development of events, our previous understandings of reality and who we are in this reality can be reinterpreted and thus lead to new expectations toward the future and who we become in that future. Creativity is thus embedded in the experience of a living reality where previous understandings of the past and expectations toward the future need to be reconsidered to align with the present development of events. I will now apply this relational understanding of reality to the understanding of leadership.

2.2 A RELATIONAL UNDERSTANDING OF LEADERSHIP

The relational approach I have sketched in this chapter will also have implications for how we can understand leadership. I will point out central characteristics of understanding leadership through a relational approach. However, as relational leadership is a relatively new term, and as its meaning is still under negotiation, I begin by pointing out two main directions in the understanding, and how various approaches relate to these directions, before defining my positioning in this landscape.

2.2.1 TWO MAIN DIRECTIONS IN RELATIONAL LEADERSHIP

Often when we talk about leadership we are actually thinking of leaders. With leaders, we usually refer to formally employed managers, although in some instances we also refer to informal leaders. All the same, we usually think of the exercising of leadership as something confined to specific persons. However, anyone taking part in transactions can – and often needs to – take leadership responsibility by conducting leadership acts. This is a view that is not uncommon in the leadership literature (DeRue & Ashford, 2010; Karp & Helgø, 2009; Quinn, 1985; Schou-Andreassen & Wadel, 1989; Stacey, 2007; Van de Ven, Polley, Garud, & Venkataraman, 1999).

Relational leadership has been increasingly the focus of studies in the last 40 years (Cardona, 2000) and they all emphasize the relationship

between leaders and followers, although in somewhat different directions. Uhl-Bien (2006, p. 654) divided various approaches to relational leadership into two main perspectives, *"[a]n entity perspective that focuses on identifying the attributes of individuals as they engage in interpersonal relationships and a relational perspective that views leadership as a process of social construction through which certain understandings of leadership come about and are given privileged ontology."*

The entity perspective in leadership research focuses on individual skills and competencies of leaders and the types of leadership skills that are required in certain situations. A representative of this perspective is Skivik (2004), who claimed that relational leadership implies that the leader needs to have relational competence. Relational competence consists of three aspects: *"An understanding of oneself as leader, and what kind of psychological patterns of reaction that characterizes the exercising of leadership. The second aspect; knowledge about how others see oneself as a leader. And third; knowledge about the persons one leads"* (2004, p. 33). However, although the role of the leader in many ways is changed from the more "traditional boss," the focus is still mainly on the leader and his or her competencies.

One central direction in the entity perspective is what has been labeled as leader-member-exchange (LMX) theory, focusing on what leaders and followers must give to get what they need in return, and how especially leaders through their leadership acts can enhance the performance of followers (Brower, Schoorman, & Tan, 2000; Golden & Veiga, 2008; Graen & Uhl-Bien, 1995; Werbel & Henriques, 2009). Uhl-Bien (2006) saw LMX theory as a foregoing theory to the entity approach to relational leadership.

The relational perspective, understanding leadership as *"a process of social construction"* (Uhl-Bien, 2006), implies that leadership emerges through active relational processes where both meaning and identities are in the constant process of becoming. This understanding also has strong parallels to how leadership is understood in the complexity

perspective (Griffin & Stacey, 2005; S. Johannessen & Aasen, 2007; Stacey, 2007).

Contributions that have taken this relational perspective in a more practice-focused direction include (Schou-Andreassen & Wadel, 1989; C. Wadel, 1999; C. C. Wadel, 2007), who recognized that there often might be a need for several participants to conduct complementary leadership acts. For example, for a group to make a realistic assessment of various options for action, several of the group members might need to provide necessary information or competence to ensure a correct assessment. Also, as there can be several, sometimes contradictory leadership tasks necessary in the specific situation, several participants need to take part in the leadership process in cooperation with one another (Schou-Andreassen & Wadel, 1989; Skivik, 2004; C. Wadel, 1999; C. C. Wadel, 2007). To conduct leadership tasks, participants need to have complementary skills in the specific situation. In other words, how participants conduct themselves and their gestures in the situation must be adjusted to the gestures of others. As I will come back to later, this will typically require both self-leadership and co-leadership.

My understanding of a relational approach to leadership is consistent with this second perspective the one Uhl-Bien (2006) has called the relational perspective of leadership. However, there may be ontological differences between how Uhl-Bien (2006) understood this relational perspective and the relational approach I have sketched previously in the chapter, mainly based on the work of Mead (1932, 1934), Dewey (Brinkmann, 2006; Dewey, 1934, 1938), and Elias (1939) and later contributions to their work.[3] A relational approach to leadership in this thesis sees leadership as something conducted in and through transactions with others where all participants contribute to conducting the leadership through meaning-making. Power is thus also confined to the transactions and thereby also interdependent. However, as leadership is conducted through transactions, participants also need to

3 These possible differences in ontology will be addressed in sub-chapter 3.1.

adjust their acts to the situations developing. This also contributes to enhance complexity in relation to what expectations there can be to how to act in various situations. In the next sub-chapters, this relational approach will be elaborated with emphasis on interdependence, situationality, and complexity.

2.2.2 LEADERSHIP AND INTERDEPENDENCE

In chapter 1, I argued that the handling of leadership dilemmas is a major leadership task in innovation leadership. To handle the innovation dilemmas, several people need to take on different leadership roles and tasks in the work (Burgelman, 2002; Uhl-Bien et al., 2007). Someone needs to secure the direction, coordination, and efficiency of the work by conducting administrative leadership. However, to develop more radical ideas, adaptive leadership is necessary. As adaptive leadership is often conducted in conflict with administrative leadership, there is a need for some form of bridging in these leadership tasks (Uhl-Bien et al., 2007).

One way to do this is by developing social plays where participants conduct themselves in ways that open up less conflicting interpretations of the situation. I will point out how leadership can be understood as interdependent, with a special emphasis on the need for both self-leadership and co-leadership, and how this also leads to less control of the outcome.

Transactional situations often involve social plays. To conduct social plays, the participants need to know their roles and perform them in cooperation with their co-players. It does little good for one of the players to be very good in a role if co-players do not know how to perform their roles. Hence, the players need both passing and receiving skills (Schou-Andreassen & Wadel, 1989). Wadel (2012) drew a parallel between passing and receiving and the understanding of gesture-response. However, he saw the sequence as passing-receiving-passing-receiving, as gesture-response-gesture-response. My interpretation of Mead (1934) is that there is no ontological difference between response and the next gesture. One´s response is the other's gesture or, in football language, the

receiving is simultaneously also the passing. Hence, the metaphor has some weaknesses, but it conveys the interdependent nature of meaning-making, and thus also leadership through meaning-making.

Relational leadership entails both self-leadership and co-leadership. Self-leadership is often understood as the ability to motivate oneself to perform tasks that one initially does not care for (Uhl-Bien & Graen, 1992). Wadel (2007) proposed that self-leadership is also necessary in transactions with others, but that self-leadership performed with others can differ from self-leadership performed on one´s own. Self-leadership thus concerns motivating and instructing oneself to perform one´s role in a given situation. However, just as one needs to perform one´s role, one must do so in close cooperation with the co-players. The participants need co-abilities in the specific situation to perform their tasks (Schou-Andreassen & Wadel, 1989) because in social plays, in contrast to theater plays, the plays evolve there and then (Goffman, 1959). There are, of course, some forms of "scripts" in the sense of shared expectations, but the meaning development also makes us adjust our expectations and thus also the kind of action we see as "right" in the situation. Hence, to contribute to developing the work in the right direction, the participants need to conduct not just planned leadership acts, but numerous situational leadership acts to enable leadership acts in others (Uhl-Bien et al., 2007). This also means that although the participants direct and control how they conduct themselves in the transactions, the responses to their gestures are very much out of their control. This also implies that any act can at any time change the whole situation through its response to the situation. Power is thus conducted through the gestures one makes. Hence, how powerful a gesture will be on the development of events depends on how others respond to it, whether they accept the gesture as right and legitimate or they redirect meaning by responding differently than expected.

We can imagine how several people need to conduct leadership in situations where adaptive leadership tasks conflict with administrative leadership. However, taking a relational approach to reality also implies that participants must conduct self-leadership and co-leadership also in

more "ordinary" meaning-making. The reason for this is that meaning-making is not defined by one individual alone, but gets its meaning through the gesture together with the response it evokes in others (Mead, 1934). In contrast to Verganti's suggestion (2006), following Dewey designers cannot define the product meaning alone, but depend on the response from others to understand what their product can be (Dewey in Bale & Bø-Rygg, 2008). Control over product meaning can thus not be determined by "gesture-makers"; rather, the gesture-makers depend on the respondents to understand what their products can be. Thus, just as the gesture-makers do not control the response their gestures evoke, the respondents can also provide new interpretations and possibilities, not just of the product, but also of the gesture-makers. This might not be an intended message, but by responding to a task or product, the gesture-maker presenting the task or product might see him- or herself in a different light, observing differing possibilities.

The ability to exercise control might be very limited from a relational perspective. Nevertheless, just as the ability to take the attitude of the generalized other can enable participants to develop better and more relevant expectations as to what their prospective gestures might evoke in others, it also enables the participants to conduct self-control. Thus, the ability to "direct" the meaning development is also embedded in the generalized other. That is not to say that this is a stable entity, as it is under continuous development. However, to enable newcomers to conduct self-leadership and co-leadership, they need to have internalized the generalized other in relation to the new product development (NPD) work. Socializing newcomers into the work thus becomes a central leadership task that usually must be conducted through more than just the formal leaders.

The need for both self-leadership and co-leadership to drive the meaning and work forward underlines the interdependent aspects of leadership in NPD work. I will now connect these interdependent aspects to the role and impact of identity in leadership and point out how leadership can be highly situational.

2.2.3 *LEADERSHIP, IDENTITY, AND SITUATIONALITY*

Leadership, power, and identity have long been connected to one another (Weber, 1922). The legitimacy and power of the leadership act depends on whether the one performing the act has an identity that legitimates his or her right to act. Such legitimacy can be developed through transactions where participants develop identities of leaders and followers (DeRue & Ashford, 2010; Karp & Helgø, 2009). However, other identities can also influence the ability to take leadership (Cutcher, 2009).

Mead´s (1934) understanding of Self consisting of the subjective I and the objective Me´s, and the understanding of Selves as in the continuous process of *becoming* rather than *being*, offers possibilities for a more nuanced understanding of the ability and motivation to conduct leadership. If it is so that the motivation and ability to conduct leadership is connected to who we are and become in the situation, then the ability to conduct leadership is highly situational. Internalizations of Me´s will to some extent direct what others will accept of one another. On the other hand, in situations of inquiry, the subjective I can take the creative initiative, leading to a redirection of the situation.

I emphasized in the previous part that conducting leadership is an interdependent activity where participants need to conduct both self-leadership and co-leadership. However, to do so, the participants need to have developed identities and relationships that make it possible to do so. Schou-Andreassen and Wadel (1989) emphasized the need for participants to have passing and receiving skills to interact in a meaningful way. We can see these passing and receiving skills not just as competencies, but also as dependent on the development of Selves in the situation. The ability to conduct a certain leadership task in a specific situation is not then just dependent on the capability to see the need for doing something and others' ability to conduct their part of the leadership task, but also on the relational right and obligation to do so. Relational work in the form of respectful acts can be central to the leadership task of enabling others to conduct their tasks in the situation (C. Wadel, 1999).

Leadership tasks are often conducted on behalf of others or to enable others to perform their tasks. Experiencing the need to conduct a specific leadership task in a specific situation thus need not depend solely on who the participants experience themselves to be in the situation, but also whose perspective they take in the situation. Taking the attitude of specific others in the situation can make the participants see the need to conduct leadership in the situation. What kind of leadership and how to conduct the leadership can thus be informed by whose perspective one takes in the situation and what outcome one expects of such a leadership act.

A relational approach to leadership is thus closely connected to the understanding of identity as embedded in the social, but where identity is not a stable and unanimous identity, but rather a multi-dimensional aspect that is determined in the situation. In the next part, I will discuss how the interdependent and situational aspects of transactions and identity lead to complexity in the conducting of leadership.

2.2.4 LEADERSHIP AND COMPLEXITY

Taking a relational understanding of leadership and reality means that one has to abandon the idea of leadership as something leaders plan, set into action, and control. As I have already pointed out, leadership is typically interdependent and situational. Additionally, it is also complex. The complex character of a relational understanding of leadership is closely connected to Mead's (1932) understanding of temporality. Both the understanding of the past and the expectations of the future are formed in the living present. This also means that at any time past understandings can be reconsidered and changed. However, this does not necessarily mean that plans and strategies made in the past are suddenly abandoned, although that might also happen. More often, the strategies and plans are reinterpreted according to the present situation. We can say that a strategy is not meaningful on its own; it is through situating the strategy in a point in time in a certain situation with certain participants that the strategy becomes meaningful (Rylander & Peppard, 2003). For the conducting of leadership, this means that the understanding of

reality, goals, strategies, and the responses prospective acts could possibly receive are constantly reconsidered as situations evolve. The development of events is not controlled fully and alone by any of the participants involved. Factors and developments beyond the control of the participants can influence how the organization as a whole understands itself and what it makes sense to do.

Several aspects can contribute to enhancing complexity in situations and thereby also the conducting of leadership. In addition, regarding the already mentioned temporal aspect, there can also be colliding needs that must be addressed in the same situation (e.g., the need to address administrative, goal-directed tasks for securing efficiency and, at the same time, the need to allow for exploration, even though this can reduce efficiency). Significant symbols can guide the understanding of what a situation or phenomenon can be and thus guide expectations for both how to conduct oneself and what conduct to expect of others in the situation. However, several significant symbols can be valid in the same situation. For example, there often needs to be a shared understanding of how participants in a work community should communicate (Kleinsmann & Valkenburg, 2008; Kleinsmann et al., 2007). Simultaneously, there can be good ways to handle work tasks in the situation that will break with the social norms for how to act.

There can also be several Me´s that participants relate to in the same situation. What is right to do, for example, in relation to a specific market niche can be wrong in relation to securing the work positions of some employees. Handling several Me´s in the same situation can thus entail handling opposing needs simultaneously.

Situations of paradoxical expectations are typically situations where the expectations toward the emergence of events take a different turn. This leads to a reconsideration of the situation, where participants activate their I and thus act creatively.

Conducting leadership in relation to paradoxical expectations is thus about handling several leadership tasks more or less simultaneously and where contradicting aspects of the leadership tasks require some form of

enabling leadership to bridge the contradictions. This is accomplished by developing meaning in the situation that makes differing and even contradictory tasks possible, also taking into account the relational aspects of the situations.

A relational understanding of leadership moves the focus from formal and informal leaders and what they do to a focus on how necessary leadership tasks are addressed and conducted through transactions. I have pointed at three characteristics of leadership: the interdependent understanding of leadership, namely, the need for both self-leadership and co-leadership; the role and impact of identity as situational and relationally embedded in conducting leadership; and the complex aspects of conducting leadership. Although the constant reinterpretation and redefining of reality and who we can become in the emerging reality represent the complexity of leadership, they also represent the possibility for creativity and innovation.

2.3 LINKING A RELATIONAL APPROACH TO RESEARCH QUESTIONS

Now, how does this relate to the three themes that became central in my study? First and foremost, participants in NPD work do not navigate meaning-making in "new territory" each time they start making a new product. Through previous NPD processes and the internalization of how the work is conducted and what it aims for, they already have ideas about what to do (Cooper, 1993). Physical objects often carry this meaning in various ways. However, the meaning a physical object, like a product, has is under constant negotiation and reinterpretation. This means that no one alone can define what meaning an object can have. However, this is also a major reason why physical objects are good for expressing and interpreting meaning; they are a physical gesture to which others respond (Ewenstein & Whyte, 2007a, 2007b). These responses can provide ideas for what can possibly be that the product developer has not considered. Hence, physical objects can be used for both making a gesture and drawing attention to unintended aspects.

What happens in transactions also influences who we become. This means that much of the enabling and constraining of ourselves and others lies in transactions. Identity and leadership is often connected to whether the leader can be accepted as a leader and whether the follower takes the role of the follower (DeRue & Ashford, 2010; Karp & Helgø, 2009). In this thesis, leadership is connected more to the gestures and responses made in the transactions. So, if it is so that participants also develop through the same processes as meaning, then it is of vital importance that the gestures made in relation to task-related issues do not lead to interpretations of identities that inhibit the ability of participants to do their job efficiently. Consequently, leadership is needed to ensure that gestures made in task-related work do not alter employees' identities in ways that make them less capable of doing their job. This can be accomplished by developing norms for how to conduct one-self in the transactions or, for example, by reinterpreting the situation in a way that makes another interpretation of identity possible. Much of this relational leadership is also conducted as self-leadership by participants. They need to conduct themselves in ways that do not relationally inhibit the others from doing their part of the work. In addition, participants need to fulfill their obligations related to identity.

We see that both task-related work, such as providing direction for the product development and providing material for exploring product meaning, and relational work, as well as upholding and reinterpreting identities, need leadership to be conducted that directly addresses task-related work or relational work. However, as indicated, there can be clashes between the expectations of how to conduct a good job and how to conduct one-self in line with norms for conducting identity. These paradoxical expectations that lead to clashes also have to be resolved through leadership. This kind of leadership is usually in the form of a response to an emerging situation than planned and calculated leadership acts. Hence, it is reasonable to expect this form of enabling leadership to be conducted by participants who have developed a gut feeling - taking the attitude of others - for when meaning develops in a difficult direction. Thus, enabling leadership is about maneuvering the

transaction out of an impossible situation, sometimes before the situation has fully manifested itself.

This relational approach to reality draws on several contributions used within differing ontologies. In the next chapter, I will start by pointing out my ontological position and making clear the most central aspects of this ontology. These aspects also have epistemological consequences for what we can know and, hence, having made these consequences clear, I will describe how I conducted the study in practice and reflect upon my experiences as I interpreted them at the time and in hindsight.

3 METHODOLOGY

This chapter describes both how I planned and conducted the study and my reflections about my experiences from the study.

Much emphasis in this chapter is directed toward my personal experiences and reflections around conducting the study. There are several reasons for this. First, the methodical approach used – abductive reasoning – is characterized as self-reflective and I report thoroughly on the iterative choices made in the study. Second, the experiences I had through the study also made me who I have become in relation to the participants in the study and, thus, have also influenced how I came to interpret and understand the findings, as well as what I saw as findings. This is again vital for assessing the quality of the findings and understandings drawn from the study.

The chapter has two main parts. First, I present my understanding of reality and how this connects to what I have called a relational approach. In the second part, I present the research strategy I chose, the methods used, how the empirical material was analyzed, and the process of transforming the empirical material into the thesis as a written product. Following this, I address the research quality of the study before I focus on the ethical considerations I encountered before, during, and in the process of writing out the study. Finally, I reflect on the methodical choices I made and how the study has turned out.

3.1 RADICAL PROCESS THINKING

My ontological position might best be described as radical process thinking or process sociology. This ontology is not well known and therefore I start by describing the more dominant ontological positions in order to position radical process thinking in relation to them. Furthermore, I will comment on how this relates to the various theoretical contributions I build upon and other related contributions I

refer to in, for example, the innovation literature and communities of practice. First, I present the broad outline of my ontological position.

When we think about ontological positioning, we often think about positivism and relativism as two opposing understandings of reality (Arbnor & Bjerke, 1994). Positivism focuses on objectivity and rationality and studies reality through analytical approaches. In contrast, relativism takes a subjectivistic, relativistic approach to understanding reality and studies reality through actors´ perspectives. Despite the focus on these positions in most ontological discussions, these extreme positions are not frequently used. The most dominant ontology found in the social sciences is now various forms of system theory. System theories open up for a focus on both subjective actors and objective reality and can be tilted in a positivistic or relativistic direction. I will here only refer to the more general principles of system theory to separate it from radical process thinking.

Kant understood reality as consisting of autonomous individuals with free will and natural systems that exist independently of these individuals (Stacey, 2003). This Kantian understanding is the underlying ontology for system theories in numerous variations. Both the acts of individuals and the underlying structures influence the development of reality. Central to research based in system theories is the attempt to reveal the underlying structures of reality to say something about what and how structures influence various phenomena. A characteristic of system theories is the dualistic understanding of reality where the individual and the social are separated "entities," just as actors and structures are separated entities.

Hegel had a dialectical understanding of reality where *"mind and matter could not be understood as separated substances, but different degrees of organization of the same substance"* (Stacey, 2003, p. 206). This understanding also resonates well with the work of Mead (1934) and Dewey (Bale & Bø-Rygg, 2008; Brinkmann, 2006) where meaning and meaning-makers are the result of the same social process of becoming. In addition, as any individual also carries relationships and society at large

within himself[4], the subjective and objective cannot be separate substances, but rather dialectical aspects of the same substance. The subjective and the objective thus co-constitute the Self. There is no "society" outside the members that constitute society.

Radical process thinking or process sociology[5] basically concerns interdependence (Stacey, 2003). This means that individuals can plan and act intentionally, but the realization of intentions depends on the response of others. However, one cannot control the acts and responses of others (Elias, 1939). Elias (1939) saw civilization as something set in motion through the acts of autonomous dynamics of networks of individuals that are socially interdependent on one another. Society did not arise as a result of an overriding plan, but as a result of the intentional acts of numerous individuals in response to change. Thus, order arises out of disorder. Stability and change can therefore be the outcome of any situation, not the result of coincidences but of the intentional responses of individuals to the emergence of events. These responses can develop into patterns of interactions that lead to stability. However, these patterns can change at any time due to the development of events. The same ideas of how numerous small and autonomous events can lead to major unexpected changes appear in the natural sciences, labeled as chaos theory (Stacey, 2003). What has been called complexity theory basically builds on both chaos theory and radical process thinking, as reflected in the work of Elias (1939) and Mead (1932, 1934).

My understanding is basically built on the radical process thinking found in Elias (1939) and Mead (1932, 1934), but rather than drawing on chaos theory, my interest resonates more with contributions within pragmatism. Pragmatism is not an ontology but a philosophy where the focus is on living practice. Stability and change can just as well be explained by the understanding of Self and habits, experience, and inquiry. Here, the aspect of temporality becomes central. The understanding of Self and reality as Mead (1934) proposed it is also

4 The use of "him", "he" and "his" is intended to refer to both genders

5 Both radical process thinking and process sociology is used by Elias (1939) to express his ontology and leads back to the dialectical understanding of Hegel (1807).

central in complexity theory, but his understanding of temporality (Mead, 1932) is to a lesser extent drawn on. My understanding and interest is thus on meaning-making as a social activity where we act intentionally, but where the outcome of our intentional acts is beyond our control. Our intentions are also revised according to the development of events.

Communities of practice contributions and the work on self-leadership have inspired this thesis, as they also focus on how participants through being socialized into a community of practice internalize an understanding of how to conduct both their work tasks and themselves. However, internalization of norms and identities as the basis for self-leadership might be better understood from the perspective of radical process thinking than actor network theory, to which communities of practice relate.

Another important contribution that has spurred much of the discussion in this thesis is the work of Uhl-Bien et al. (2007) and Uhl-Bien & Marion (2009). However, although they also build on complexity theory, they are based on system theory. Nevertheless, it is possible to draw from different ontologies as long as I pay conscious attention to how I combine them. For my purpose, Uhl-Bien et al. (2007) and Uhl-Bien & Marion (2009) point out something central about leadership in new product development (NPD) work that I think can be better explored through radical process thinking.

Differences in ontology are thus also why I do not speak about "sense-making," but use the phrase "meaning-making" instead. Sense-making is closely connected to Weick (1995) and his ontology is based in system theory. This is especially seen in the focus on reality as levelled and the understanding of temporality, where the focus lies on the past rather than the future (Mintzberg et al., 1998, p. 198). There is a sense of stability in relation to understanding the past that makes us lose the dimension of the past as a source for reinterpretation and thus also for creativity. To the extent that the term sense-making is consistent with my ontology, I could have used it. The problem is that others reading the

thesis would probably interpret the term in line with Weick's understanding, as this is how it has become known and used.

Radical process thinking does in many ways contrast system theory. A radical process understanding of reality as I use it is based on an understanding where "*mind and matter are part of the same substance"* (Hegel in Stacey, 2003, p. 206). Hence, we cannot be separated from what we do and we cannot understand what we can do without understanding who we can be.

As society is not something separate from individuals, it has both objective and subjective aspects of the Self. The objective aspects help us align with others, or take on the attitude of others. The subjective aspects give us agency to respond creatively to what emerges. The core of creativity is thus not an individual quality as such, but something triggered by inquiries in a social situation. Creativity is therefore not only connected to a change in "matter," but also to a change in mind. This aligns closely with Mead's (1932) understanding of temporality. This understanding of reality also has implications for what we can have knowledge of and know and how we can study leadership through meaning-making in NPD work. These implications are addressed in the next part.

3.2 PLAUSIBLE INTERPRETATIONS, RATHER THAN AN ONLY TRUTH

Based on this ontology, what is it possible to know and, consequently, how must the study be conducted to explore relational aspects of NPD work[6]?

First and foremost, I cannot arrive at an objective and only truth for the research problem. However, I believe that some understandings are more valuable than others, and this can depend on the extent to which understandings are experienced as useful in practice. This again means that the researcher must really understand what this practice is about. This has implications for how to study the theme.

6 As pointed out in chapter 1, the research problem was more the result of the study, rather than the initial research problem.

If meaning and meaning-makers co-constitute one another, then I need to develop the ability to take on the attitude of the informants to interpret their gestures in line with what they try to convey. In other words, an expressed utterance does not have universal meaning; it is interpreted in a social reality. If the researcher wants to understand meaning-making and the conducting of leadership in NPD work, then the researcher needs to develop the ability to take on the attitude of the informants in interpreting what happens. This means in practice that I had to choose a research strategy that provided room for being socialized into the community of informants.

Another implication of this relational approach is that there is no outside position for the researcher to take because the socializing processes develop through transactions. This again implies that the researcher also influences the meaning development, and the meaning and participants in the transactions also influence the researcher. Hence, meaning and focus can and will develop underway as the researcher and the informants develop. It is natural that the researcher, through developing the attitude of the informants, reconsiders previous understandings and aims. A relational approach to reality means in practice conducting a study characterized by abductive reasoning. I will elaborate on what abductive reasoning means and what it means to conduct an abductive study.

3.2.1 FIVE CHARACTERISTICS OF ABDUCTIVE REASONING

Abduction as a (scientific) form of inquiry stems from the work of C. S. Peirce. His understanding of the term developed over the years, as he had problems with his understanding in relation to logic and in relation to distinguishing abduction from induction (Anderson, 1987, p. 17). After the turn of the twentieth century, there was a change in his understanding and it is this developed understanding of abduction on which I base my understanding.

Abduction is an activity connected to both everyday life and scientific creativity, and Peirce saw it as one end of the continuum between

perception and abduction. Abduction can be described as the creative process of developing new possible hypotheses in situations of inquiry, focusing on possible "may-be´s" rather than testing for "accuracy" or implications. Abduction is connected to human instinct (Anderson, 1987, p. 35), but Peirce did not connect it to intuition as such, but rather to experience. Furthermore, in the later period of his work, he saw abduction also as a process involving both logic and psychology, but where neither reigned exclusively (Anderson, 1987, p. 39). This means that both logical and psychological aspects of abductive reasoning exist.

Abduction can be seen as the first phase of scientific inquiry and it is the only creative mode of developing possible hypotheses. Induction and deduction are not concerned with the possible "may-be´s," but rather with testing and elaborating on the hypotheses developed through abductive reasoning. As Anderson (1987, p. 53) formulated it, *"Induction, then, is the final testing of the created hypothesis. It mediates between abduction and deduction by testing the 'must be' of what 'may be' against 'what is".*

Martela (2011) represented an understanding of induction and deduction that is more in line with how we usually understand these forms of reasoning (Thurén, Gjestland, & Gjerpe, 2009). The common understanding of inductive reasoning is that a hypothesis is developed based solely on empirical observations. Deduction, on the other hand, starts with a theoretical understanding of something. Based on this theory, a hypothesis about a certain situation is outlined. Then this hypothesis is tested against empirical observations.

Abductive reasoning also departs from some theoretical understandings, aiming to develop a credible understanding of reality by interaction with reality. As this is part of everyday life, we can say that our pre-understanding will inform our expectations of future events, but as we experience reality we might experience things that do not coincide with our previous understanding. We then need to reinterpret our previous understanding to incorporate the events with our previous experiences to make our understanding meaningful to us. Martela (2011, p. 3)

described abductive reasoning as *"…an approach to research where the researcher proceeds from his own pre-understanding and puts into active play with the data as well as with various theoretical frameworks with the aim of constructing the most trust-worthy and practically beneficial understanding of the phenomenon under scrutiny."* This understanding also connects abductive reasoning closely to pragmatism, as it situates the researcher in the research. Emphasizing the aim to develop trustworthy understandings refutes the idea of an objective, absolute truth, but at the same time recognizing that some understandings are more trustworthy than others also aligns with pragmatism, as does the emphasis on developing understandings that are practically beneficial to someone.

Martela (2011) described five virtues of abductive modes of inquiry connected to how research is conducted. The first virtue is the need to maintain an attitude of holding theories lightly. This implies the will to abandon previous understandings and theories if at a later stage they are seen as less interesting. The second virtue is to have a consciousness in relation to one's own pre-understanding and make this clear for others. The third virtue is that researchers need to *"constantly increase their reflective self-awareness about the attitudes and values underlying their research"* (Martela, 2011, p. 1). As the researcher from my ontological position is seen as influencing and influenced by the research process, it is of vital importance that the researcher seeks to understand his or her own blind spots and become increasingly aware of his or her own attitudes and values through encounters with the attitudes and values of others. The fourth virtue concerns conducting the study iteratively, meaning that rather than following a pre-planned research design, the researcher assesses and reflects upon what is experienced in the research and adjusts the research to what emerges as meaningful and important. To conduct the study iteratively, the researcher needs to constantly reflect upon what happens, understanding the Self in relation to others' expectations of the future, to make sound judgments about how to proceed with the research. The last virtue involves reporting the research as transparently as possible. This reporting will enable readers to better

judge the trustworthiness of the conducted research and how it should be interpreted.

I will now describe how the study was defined, organized, conducted, and analyzed before commenting on the research quality and ethical considerations.

3.3 RESEARCH STRATEGY, CASE HOST, AND ACCESS NEGOTIATIONS

My research theme in this thesis developed and became more focused during the study. To provide insight into what research strategy I chose and why I chose it, I will start by addressing my pre-understanding of this study, as this also directed my initial choices. Following this, the choice of research-strategy and how I got access to both case-host and informants is described.

3.3.1 PRE-UNDERSTANDING

The relational approach that this thesis is based on is something I developed an understanding of at the master level. My previous studies had been in more traditional marketing, management and organizational studies, in addition to some sociology. Although I used qualitative methods in my master's thesis, my methodical "upbringing" was influenced by understanding quantitative research as the ideal.

The theoretical approach I started with in my PhD project was an evolutionary perspective on innovation. To this perspective, I wanted to add a relational approach by building on the work of Wadel (1999), Mead (1934), and Goffman (1959). When I started, I had not focused on ontology, and my combination of theories was not questioned by others in my research community. The reason for this might be that system theories are often tilted in a positivistic or relativistic direction, and this could be understood as a study tilted toward symbolic interactionism. As previously mentioned, Mead (1934) is drawn on from many perspectives (Athens, 2002; Blumer, 1969; Karp & Helgø, 2009). I had relatively considerable experience with Mead's theories and also to some degree

with Bateson's (2000, 2002). On the other hand, I had no knowledge of pragmatism or complexity theory, although I knew of some of Stacey's early work. It was only later in the process that I became more aware of these theoretical directions.

Through both studies and practical work experience, I have become interested in business development, entrepreneurship, and relations. Hence, understanding profitability, running a business, and market thinking was not new to me. I have, however, not worked with product development, nor do I have any design education. Although my practical experience in marketing and business development made it relatively easy for me to understand much of the logic in NPD work, I presented myself in the fieldwork first and foremost as a researcher. It was as a researcher that I had the "right" to ask to follow the NPD work. This might also be why I also tried so hard to be a "proper" researcher, living up to some ideal of the objective, detached, and systematic observer.

Although I was aware of the company that later on came to be the host of this study, I had no knowledge or ties to anyone within the company. I had neither knowledge of the porcelain industry in terms of production; nor did I have a deeper knowledge of the conditions for production/industry in the region.

3.3.2 CHOOSING A CASE STUDY STRATEGY AND DEFINING THE CASE

To gain insight into how participants in NPD work develop an understanding of what to do, I needed to follow them in their daily work. This because I also expected there to be important aspects of the work that could be understood as tacit knowledge, which the participants could have difficulty expressing in an interview and I could have difficulty in interpreting consistent with their understanding.

A case study allows the researcher to study a phenomenon in its natural environment as it develops (Stake in Creswell, 2007; Denzin & Lincoln, 2005; Yin, 2003). What typically characterizes a case study is that it has certain temporal and regional boundaries, it can be difficult to draw the

line between context and studied phenomenon, and several methods are used to explore the phenomenon (Creswell, 2007).

The case in this study can be defined as the NPD work-consisting of numerous products, projects and processes developed in parallel, across, and built on another-in a specific company and where several participants from various departments, and from both outside and inside the company were involved. The study was conducted from August 2007 until June 2011. Despite that some NPD projects could be understood as sub-cases, I will treat them as parts of one case consisting of numerous products, projects, and processes as these came to influence one another to the extent that it is hard to separate them.

The company chosen as case host was Figgjo AS. It was chosen because of its reputation as a company producing innovative products and as having chosen to keep its production in a high-cost-country, and thus choosing a different strategy for handling the globalized market situation than its competitors.

The study was conducted as fieldwork where I used written material, interviews, participant observation, and field conversations to develop a broader understanding of how leadership through meaning-making is conducted.

Later, how the various research methods were used and how they complemented each other will be described. However, first I will describe how I gained formal access to the company and how informed consent from the informants was addressed and obtained.

3.3.3 GAINING ACCESS TO THE FIELD

The formal access to conducting the study in the company was obtained before beginning the research. In contrast, obtaining informed consent from the informants was addressed during the research as informants were included in the study and informed consent was monitored. I will describe both these processes of gaining access to the field.

3.3.3.1 Gaining access to the company

My knowledge of the company I wanted to study was from press articles, the company webpage, visits to the factory outlet, and memories from my childhood when every school, public building, and private household had its own share of tableware from the company. I had no personal contacts within the company. Neither did I know anyone who could put me in contact with any "gatekeepers."

My initial contact was when I called the company and asked to speak to someone about innovation in the company. The reply I got from the receptionist was*:*

"You can in principle talk to anyone here about that, we all work with innovation. But you could start with the product development manager. She´s not here at the moment, but I´ll give you her mobile number."

This encouraging, straightforward answer enabled me to make further contact. I had a meeting with the product development manager and one of the product developers where I presented my project and why I believed the company was a good place to study interaction in innovation processes. As we talked, I understood that my thoughts on the subject resonated with their own experiences in working with innovation. They were positive about my project and we agreed that I would make an information packet[7] to the board of directors to allow for board member comments. The product developer, also a member of the board, took my proposal further, and I was approved to conduct the study relatively quickly.

3.3.3.2 Obtaining informed consent

After receiving formal permission to conduct the study, I started the work by telling my potential informants about the project, its aim, and how I wanted to study the topic. I emphasized that I wanted to study how innovation processes developed in practice and that my focus was on the

7 See appendix A for further information

role interaction plays in innovation processes. My aim was not to evaluate their work, but to learn from them. I wanted to take part in as many interactional situations in their work as possible.

All informants[8] were told about their right not to participate and to withdraw from the study at any time. I further informed them about the possible personal hazards that participation could have for them as individuals. As I saw it, the study would have few of the typical hazards emphasized in the method literature, such as risk to health, personal safety, loss of job, or mapping of political interest. The personal cost this study could have was that my understanding of what they did in the interactions could differ from their understanding. I could also come to notice things that the informants had little consciousness of in themselves.[9] What if my observations and interpretations made them feel bad about themselves? On the other hand, reinterpretations of who we are as individuals and in relation to others is a natural part of all interaction and can also be an enriching experience.

I never asked my informants to sign any kind of form because I don´t think such a document would have any value in the kind of study I conducted. First, it would be impossible to give a precise description of the study beforehand as the meaning in the study also evolved. Second, the understanding of their consent would develop during the research through their experiences of participating in the study; thus, consent had to be re-confirmed many times. The way I did this in practice was to check with the informants about whether they would accept my use of this or that episode to illustrate how meaning developed in an innovation process. Observations that I thought could be harmful to informants if I explicitly presented or discussed with them have not been explicitly presented in the thesis. However, although such episodes are not expressed explicitly in the written thesis, they still are part of the

8 "All informants" entail the informants I actively wanted to include in my study, the participants who mainly took part in the activities I took part in, and informants that I later chose to cite. There were also informants who initially had not been asked for informed consent, but were included in the study along the way. They were asked for consent before I made use of any information that could be traced back to them.

9 See "Ethical considerations" for further discussion.

development of meaning, as they are part of my abductive process of understanding what went on.

Another way to ensure that consent was present in the situation was to be aware of and adjust to the cues a researcher gets from informants in specific situations. People can answer "yes" when you ask whether you can take part in a situation and simultaneously express that they are not very comfortable with your presence. In such instances, I tried to leave the situation, if not physically, so by stopping taking notes.

It was first and foremost with the persons I interviewed and followed in many situations that I undertook the process of asking for consent beforehand. "New" informants were oriented and asked for consent as they became involved in the study. A broad array of employees was never asked for consent, as they did not directly function as informants. Such persons were, for example, all employees taking part in general meetings, ordinary production, and the canteen. I still needed to inform them about my reason for being at the company. This was done through a brief presentation about me and my study in the company newsletter. Here, we also said that additional information about the project could be supplied by the receptionist to anyone interested. I gave an orientation going a bit deeper into the study than in the newsletter, but tried to keep it in understandable language for everyone. Copies were made and placed in the reception area.

Having focused on how I conducted the various access negotiations, I will now describe how the fieldwork was conducted.

3.4 THE FIELDWORK – DESCRIPTIONS AND CHALLENGES

In studying relational aspects of NPD-work I needed insight into not just the work, but also how participants in the work understood reality and their work. I needed to be socialized into the work. For this reason, fieldwork was chosen as the overriding methodological approach for studying the case. This fieldwork drew on several methods: participant

observation, field conversations, qualitative interviews, and written material.

What characterizes fieldwork is that the researcher studies a phenomenon, culture, or group in its natural environment and on its own terms (Hammersley & Atkinson, 2004). Three characteristics of fieldwork are the use of participant observation as the research method, a focus on interaction, and the study developing through the reflective round-dance among method, theory, and data (C. Wadel, 1991). Historically, we have often connected fieldwork with anthropologists and ethnographers studying foreign cultures. However, in recent years fieldwork as a method for obtaining greater insight into a phenomenon has been conducted by political scientists and others within the social sciences (Hammersley & Atkinson, 2004), and it has also been increasingly more used to conduct studies within own culture (C. Wadel, 1991). In contrast to the more traditional form of fieldwork where the researcher follows informants also in their private life, I only followed my informants in their everyday work life, focusing on meaning-making in NPD work.

First, I will give a quantified overview of the field-work and the conducted activities (see Table 3.1.) Second, as I do not describe any of the various products and projects in full in this thesis, but refer to their names in the following chapters, I will provide an overview of the projects I followed and the time period and methods I used (Table 3.2).

Table 3.1: A quantified overview over the fieldwork and conducted activities.

Fieldwork, meaning-making, and leadership in NPD work, Figgjo AS			
Subject	**Purpose**	**Description**	**Outcome**
Total time spent: approx. 900 hours	Following NPD work and NPD participants in their natural setting and in various work tasks	Interviews, participant observations, field conversations	Method triangulation and sources triangulation, rich contextual material
Interviews; 12	Getting an overview of the various tasks, projects, and arenas for participation of key informants	Key informants interviewed early in the fieldwork	Initial introduction and overview over the NPD work Material for validating later interpretations
Meetings; approx. 100 meetings	Following more formal transactional situations where meaning in NPD work is developed	Product councils, market councils, project meetings, production planning meetings, product launch meetings, department meetings, general meetings, quality improvement meetings, ad hoc meetings	Rich empirical material of decision processes, discussions, upholding identities, and re-negotiating identities
All-day activities: approx. 9 days activities	Getting insight in how formal strategy is discussed in the company Getting insight in how designers get inspiration	Strategy seminars, design seminars, "inspiration journey" with three of the designers	Insight into company culture across disciplines Insight into design communities

Other out-of-house-activities: approx. 8 activities	Getting insight into how participants present themselves and their work outwardly, and how others respond to them	Design seminars, unveiling a wall installation, meeting with official authorities, company presentation, "canteen fieldwork"	Insight into various representation tasks, contact with customers
Participant observation and field conversations: the rest of the time	Getting insight into the norms, routines, and ways of working by taking part in the informal transactions connected to more individual work tasks and ad hoc tasks	Following participants in their various work tasks between meetings, spending time in the casting department following various work tasks in production and laboratory	Insight into the aspects of the NPD work and meaning-making that participants are not necessarily able to express in an interview
Written material	Getting insight into historical background and context Keeping track of various development processes Checking out own assumptions against formal job descriptions and meeting minutes	Historical material, meeting agendas and minutes, NPD strategy, job descriptions, process descriptions, and marketing material	Sources triangulation, validation of own assumptions, sources of inquiry
Products and projects followed: approx. 14 NPD projects and more than 120 products	Following the NPD work more broadly through following all NPD activities ongoing at the same time	None of the projects or products was followed from A to Z, but to various extents; they were also often closely intertwined with other products and processes	Comprehensive insight into how meaning-making develops across products, processes, and projects

Table 3.2: Overview of time periods, projects, and processes followed in the fieldwork.

Time schedule and projects/activities followed			
Time period	**Field tasks**	**Activities/work tasks followed**	**My actions**
September 2007 – April 2008	Developing an overview of the field; developing relationships with informants	Standard décor project Front dining project, launch Boquse D´Or Unika Production capacity project Institution project	Semi-structured interviews with key informants (12 interviews) Following project meetings, product councils, market councils, and various other meetings in the NPD department
May – July 2008	Following projects and products Following model-development	Model development Boquse D´Or Unika Institution project	Following the model developers and product developers in their work in the casting department by participant observation/observing participant Following the preparations and participation in the Bocuse D´Or by participant observation

August 2008 – December 2009	Following idea generation Focusing on specific themes for papers	100% Design, London Re-cycling project, institution/tray project, small product project, wall installation, ellipse plates, cups and mugs, Unika	Following designers on inspirational trip to 100% Design, London, participant observation/observing participant Following project meetings, product councils, market councils, and various other meetings in the NPD department, in addition to following individual work in the NPD department and casting department
January 2010 – October 2010 (little activity)	Keeping in contact	Various ongoing projects	Product councils, project meetings
Nov 2010 – June 2011	Checking out interpretations, finding additional information, developing additional focus for thesis	Lab work, reorganizing of work tasks in production, packaging project, banquet project	Following development work at the lab and reorganizing of tasks in packaging, in addition to field conversations in production

3.4.1 A TYPICAL DAY OF FIELDWORK

The frequency of my visits to the company varied, from where over a period of five weeks I was present in the company more or less every full working day to more spread-out days where I might follow an important meeting or event and leave afterward. Outside the more intensive periods of fieldwork, I was kept updated by my contact person on upcoming meetings and events. I kept people aware of what kind of meetings and processes I was interested in following and some of my informants were also good at alerting me to processes into which my contact had lesser insight. This sub-chapter provides a description of a typical day of fieldwork in my study.

Usually, there would be a meeting or other planned activity that was the main reason for coming to the company that particular day. Depending on how much time there was until the meeting started, I would chat with the persons available about what they were working on and I would also try to catch up on things I had missed in the processes and informants' reflections on what happened when we were last together. I also engaged in small talk about the weather, holidays, how my project was going, what we did on the weekend, and exhibitions someone had seen that could be recommended.

I often took part in practical preparations for the meeting, such as carrying in products to the meeting room. In meetings, I usually took notes to a greater or lesser extent. In meetings with many participants, I sometimes just had to follow the discussion as I missed so much of the discussion by taking notes. I never used tape recordings, although that would have been more practical in such meetings. The trade-off with participants speaking less freely kept me from using a tape recorder. My role in such meetings was passive observer. Sometimes, I was asked about my opinion on issues when an outsider´s view was desired. I was almost never asked about my opinion as an "expert on innovation." I take this as a sign that they understood and accepted my presence in the

company as one who wanted to study innovation in practice, not teach them about theories.

After the meeting, those in a hurry for their next task disappeared. Usually, some stayed behind discussing further the issues of the meeting, especially when they disagreed with the final solution. This was also an arena for clearing up what came out of the meeting. People came forward with their perceptions and expectations of the meeting and how they felt about any turn of meaning that had taken place during the discussions. This was also an opportunity for me to ask about what I did not understand, to say what puzzled me, and to point out what contradicted my expectations of the meeting. It was in these discussions that I learned the most about unstated agendas, goals, norms, and rituals about which in the beginning I had little understanding. By breaking these codes of behavior, I obtained a deeper understanding of what went on in the meetings.

When people left the meeting room, I often asked what they were up to next. If they were going into a new meeting, I sometimes asked to join them. Other times, I asked people who were following up something from the meeting if I could come along with them. Another way to engage in more interactions was to go into the product development (NPD-) department. The designers would usually come up with meetings, discussions, or issues they were working on and include me in their work tasks. The degree of participation could be described as depending on how close a relationship I had with the informants, the formality of the situation, and the kind of situation.

On some occasions, the meeting I had come for was canceled and no one had remembered to inform me. In such instances, I was often offered another meeting or something to follow. I understood that they felt a need to give me something to compensate for failing to inform me and to ensure that my journey was not wasted. In the beginning, I understood such meetings that I more coincidentally attended as possibilities to interact with people in meetings in which I usually did not participate. My experience with these more peripheral meetings was that what happened

there could be closely connected with what happened in the innovation processes I followed through "relevant" meetings. I gained more insight into the implications of decisions made in one meeting for other processes and meetings. It also helped me understand that the sources of collecting data could be many more than I had thought when I started.

I usually stayed at the site for the rest of the day when I attended a meeting. By doing this, I could better follow up situations that were not seen as sufficiently "important" for anyone to inform me of them. This would typically be ad hoc meetings in the NPD department about situations that needed immediate attention or coordination. It could also be following the designers in their use of colleagues to "think aloud" on design proposals. When there was nothing for me to participate in of a more formal character, I sometimes sat on the sofa in the department catching up on my notes or looking through trade magazines. From this position, I could follow the movements in the department. Some of the designers sat in an office landscape, others in adjoining offices with their doors open onto the open landscape.

When I felt the need to move, I often went to the casting workshop. Here I could follow more practical work and interact with people in situations other than in the NPD department. The casting workshop and the NPD department were the only two places I felt I could just hang around without interfering with the ordinary tasks of the individuals working there. I did, however, move around in other departments, but usually for a specific purpose.

In the next part, I will describe how the various research methods contributed not just to "collecting data" but also to the development of the study and to the development of identities. I needed to be socialized into the work to grasp some of the tacit knowledge the work entailed, which I would never have been able to grasp in the beginning of the study or by only conducting interviews.

3.4.2 METHODOLOGICAL TRIANGULATION

The use of several methods in the fieldwork was a way to collect differing forms of empirical material, and it also enabled me to make better use of the various methods. For example, to interpret observations in line with the informants, I needed to discuss the observations and interpretations with the informants. As studying written sources was what I started out with in the fieldwork, I will start with this.

3.4.2.1 Various forms of written material

In the first meeting with two of my key informants, they recommended that I start by reading a book (Rosenberg, 2001) written for the 60th anniversary of the company to get some idea of its history and what characterized its way of working. Reading the book did not just give me insight into production and historical events that were important, but also gave me a frame of reference for making sense of the information I got from my informants. It helped me in conversations with informants, not just in making connections, but also as a form of showing interest and respect for their work, history, and identity.

While this historical material introduced me to the company, its history, and work, the next two sources of written material, provided underway and late in the fieldwork, had other functions. The second source of written material was meeting agendas, product launch calendars, and minutes taken in meetings. These often clarified the status of various products and projects and thereby also eased my understanding of things. However, as my study came to be more about how the work was conducted across products and projects, it became less important for me to use these written sources for "mapping" the specific product development processes. Nevertheless, they were useful for keeping track of how products changed names and purposes and were taken into new projects underway.

A third form of written material was job descriptions for the participants in the NPD department and the NPD strategy for the following years. The descriptions helped me see the areas of rights and obligations for the

various positions and what kind of qualifications people needed to hold those positions. I received these documents relatively late in the fieldwork. Hence, I used them more for confirming my already developed understandings of NPD strategy and job tasks. This enabled me to see that what I had thought were more informal tasks were also described as tasks in the job descriptions. There were also deviations between the formal process descriptions and how employees actually conducted the NPD processes. Such deviations led to inquiries where I explored possible reasons for the deviations. Had I had access to this written documentation earlier in the study, I might have overlooked these deviations by interpreting my observations more in line with the written descriptions. On the other hand, had I received them earlier, I might have more systematically addressed the various tasks at an earlier stage.

We see here that the written material had three functions. The historical material gave me the initial insight, overview, and talking themes as I started out; the meeting minutes and similar documents provided an overview of where the various products were in the development process; and the NPD strategy and job descriptions played a control function in my interpretations.

After having studied the anniversary book (Rosenberg, 2001), I began interviewing what I perceived as key informants in the NPD work. I will now describe how these interviews were conducted and what function they came to have in the study.

3.4.2.2 Talking themes through interviews

As part of the fieldwork, I conducted semi-structured interviews with several informants I perceived as central in the innovation work[10]. I interviewed all middle managers, except for the financial manager. I also interviewed senior designers and product developers, the production

10 One of the interview guides are attached in appendix B, as an example.

planner, the quality control manager, and finally the "old" and "new" general managers[11] (12 interviews in all).

Semi-structured interviews can be understood as interviews with a preset purpose where the interviewer is interested in exploring a certain theme, but where there is much freedom in what questions to pose and following up the issues the respondents bring forth (Denzin & Lincoln, 2005).

Most of the interviews were conducted at the beginning of the fieldwork. The purpose of the interviews was to get an overview of how the innovation work was organized in practice, what role the various participants played, and what innovation processes they saw as interesting and important for understanding how they worked with innovation. Another equally important purpose was to learn the work tasks of the respondents and how these work tasks were connected with the work tasks of others.

The interviews resulted in a broad introduction to the organizing of various work tasks connected mainly to product development and the informants´ own expressed understanding of their role in this work. The interviews also gave me the possibility to elaborate on what I perceived my study to be about and for my informants to ask about and comment on my understanding. The informants suggested various activities I should join and investigate. I was also told stories of product development that the informants saw as typical or special. The interviews had three valuable functions in the study. First, they gave me insight into the organizing of the work and who took part in what. Second, they also helped my informants and me develop shared talking themes in other conversations. It was easier for me to pose questions in field conversations when I had more insight into the work. The third valuable function the interviews had was providing a possibility to go back to the notes from the interviews and reinterpret their meaning at the end of the project. This was in a way a form of triangulation of the understandings I

11 There had recently been a change of general manager, and thus I saw it as important also to get the views and reflections of both the manager who had gone over to another company and the expectations of the new manager.

had developed. How did these understandings resonate with the answers I received from my informants in the interviews? Looking at the notes in hindsight, I saw that the informants had spelled out many of the understandings that grew within me during the study, but that I obviously had not been able to understand fully at the time. There were also numerous issues that informants were not able to specify with more than a gut feeling, but during the fieldwork I developed a better understanding of what they were talking about.

I will now discuss the methods that dominated my study, namely, participant observation and field conversations. Although it is acknowledged that in practice there are often degrees of participation in most observations, the qualitative research literature often divides between observation and participant observation. My understanding of more or less participative observation appears to relate more to Gold´s (1958) understanding of participative observation and observing participation.

3.4.2.3 Participant observation and observing participation

What characterizes participant observation is that the researcher follows the activities the participants themselves initiate, rather than controlling and directing the activities in which the participants should participate. Thus, observing the kind of activities, who participates and in what way, and what is being said is of central interest to the observer (Fangen, 2004, p. 12). Thagaard (1998, p. 64) said that observation can mean that the researcher takes an active part in the living environment of the participant or that the researcher studies the informant from the sidelines. The first form of observation is labeled participant observation, while the latter is called non-participant observation. Aase and Fossåskaret (2007, p. 32) claimed that the participant observer is only participative if he is one of the participants being observed. In reality, the extent to which the observation is participative will usually vary (Aase & Fossåskaret, 2007; Denzin & Lincoln, 2005; Fangen, 2004). Gold (1958) described four degrees of participation and observation, ranging from the

complete observer, participant as observer, and *observer as participant* to *complete participant*.

The observation conducted in my study has been in the form of *participant as observer* and *observer as participant*. In, for example, product councils, the participants in the meeting were the active ones; I was the more passive one, observing their acts. Still, I was part of the situation I observed. In other, more informal situations, I could also play a more active role in taking initiatives for talking themes. The difference between participant as observer and observer as participant is to my understanding whether the researcher takes an active part in the development of events or follows the development of events more passively. The detached observer and the full participant were two roles I never had. However, the participant as observer and the observer as participant were roles that I alternated between, depending on what suited the situation.

Finding out how participant observation in practice can be conducted involves teamwork, where both the researcher and the informants influence, renegotiate, enable, and constrain various ways to conduct the observation. For example, at the beginning, I had difficulty in playing the "passive observer" in meetings. Simultaneously, I think I was overtly conscious about being the "detached observer" in more social conversations. That did, of course, not work. First, the "detached observer" is far from any role I would manage to perform. Second, the researcher also has to convey to informants that he or she isn't ´t always taking notes. That is not to say that the researcher isn't always learning. I learned about whom the informants saw themselves to be, how they saw their trade to be, and who they saw me to be in relation to them. It was through social encounters between various tasks and meetings that we also developed understandings of what we could be in relation to one another and what we could possibly do. As our field relations developed, it was easier for me to offer practical help, such as carrying things and delivering things. I was also given the opportunity to try out various tasks at the casting shop, although not in the "ordinary" development process. This gave me a fuller understanding of the practical challenges in

developing models and made it easier to follow the discussions in relation to development and production. As I came to know more people in various parts of the company, it was also easier for me to walk along with informants in their various tasks. My key informants could, for example, ask me if I wanted to follow them down to production as someone had called for them.

As I developed my "relational radius," I could also ask more distant informants if I could follow them in their various tasks. Often, the tasks did not have anything to do with NPD processes in the narrower sense, but through these "expeditions" I learned a lot about the numerous "unofficial" side tasks people had, helping out, instructing, learning, or just talking through an issue with others. The focus of my more or less participative observations also developed as I began to take part in more diverse transactions. At the beginning, I focused on work tasks in relation to Aldrich´s (1999) and Burgelman´s (2002) understanding of innovation processes, while also paying attention to the relational work conducted together with the task-related work. The focus was typically on the various products and NPD projects. As my participative radius developed toward more periphery work groups, projects, and tasks, I began to focus more on how meaning-making in one project, process, or task influenced what happened in other projects, groups, and tasks. This also implied that what happened in the field began to set the agenda for what I saw as relevant and irrelevant to follow.

The participants were often part of informal "mobile helping forces" that were called upon when something went wrong or when something happened that someone meant others to know about or experience. Many of the calls from production to the NPD department were requests for one of the product developers to come down and take a look at something that had happened. Such situations were about both developing meaning and learning. Following along on such responses to requests made it possible for me to ask questions about what the problem was, how grave it was, and what the consequences of it could be. On the way back to the NPD department, I also often had the chance to ask how often these requests were made, what the developers actually

decided upon, and what they had to do. Such field conversations enabled me to obtain more insight into what we had just been part of. In the next part, I will cover how field conversations actually could take on different forms and functions.

Developing identity through field conversations

In contrast to interviews, field conversations are not pre-scheduled meetings with selected informants; rather, they are spontaneous conversations and discussions that the researcher has with informants during the fieldwork. These conversations can be initiated by the researcher, but they can also be initiated by the informants commenting on events (Aase & Fossåskaret, 2007). Common for field conversations is that they reflect shared experiences and observations where the informants taking part in the conversations express their interpretations of events. I experienced different types of field conversations with my informants. The first type is the preparing conversation. For example, before a meeting I could ask participants what kind of meeting it was and what issues were most important. A second type is the investigating type: This type usually followed directly after meetings where I would ask a key informant about what was happening. In these conversations, I could raise the issues I did not understand from employees' actions in the meeting. Such conversations were invaluable for developing a deeper understanding of what they did and why they did it.

Another type of debriefing conversation after meetings was usually initiated by informants and can be understood as a form of "letting off steam." In these backstage conversations, participants would usually express their frustration about what happened in the meeting, the outcome, or the contributions of others. It also gave participants the chance to tell me their version of reality and what was happening. These conversations were useful to me as agendas, intentions, and differing expectations were more clearly expressed. They were also a confirmation to me about being let in "backstage" and in this way also an affirmation of me as a person with whom one could discuss issues that other participants might not be interested in discussing.

Yet another type of debriefing conversation after meetings could take a completely different form, where laughing, joking, and giggling were what it was all about. This type of conversation usually occurred after we had attended several meetings with outsiders, where seriousness, alertness, and best performance were required. These debriefing conversations appeared to be a reaction to a form of exhaustion where jokes, comments, and self-irony were exercised. Several informants could take part in these conversations, as they often took place in the open NPD area. This also often led to the retelling of what we had taken part in to others who had not participated. Through this, I learned a lot about not just the meetings, but also what to take lightly and what to take seriously. Interestingly, when humor and jokes were used, the comments often touched on serious issues that contradicted what appeared to be taken-for-granted assumptions.

The two last-mentioned types both have strong social aspects and they both address meaning-making in relation to work tasks, as did the "catching-up conversations" that usually took place when I had not met the various informants for some time. In these conversations, the roles of researcher and informants were downplayed, as we all played a more or less equal part in the conversations.

A type of field conversation that is more directed toward abduction is what I call the creative speculation type. These field conversations were often initiated by me after mulling over ideas for some time. In these conversations – usually with key informants – I tried out various understandings and working hypotheses about how they exercised their innovation work. In such conversations, they could correct me, add their thoughts, reject my ideas, or make me aware of something I had overlooked. Through these discussions, we also began to express aspects of the transactions that they had explicitly thought about to a lesser extent.

In practice, a field conversation usually had elements of several of the "types" I have mentioned here. The reason for categorizing them is to make it clearer that the field conversations I had with my informants

were of differing "types" with differing purposes and also, to some extent, differing participants. For example, the "creative speculation" type of conversation usually demanded informants that knew well the situations or aspects on which I speculated, in addition to knowing my project well. This type of conversation was highly reflexive where openness, creativity, and trust appeared to be important. I needed to feel that the informant I discussed this with could treat it as a form of exploration of meaning, rather than a fixed view or a form of conclusion. This is because I needed the creative responses of the informant to my thoughts, rather than acceptance or mere registration of my ideas.

As I have described, the field conversations could take various forms and have various functions. It was mainly through these field conversations that my informants and I developed relationships that made it possible for me to be allowed backstage. Had I not had the opportunity for these numerous informal field conversations, I would probably never have been able to develop the nuanced insight I developed into the NPD work. In addition, we would not have been able to develop the identities that became central for what I was let in on, for my ability to understand what it was all about and their ability to understand what I should be let in on, and what I did not understand myself. These field conversations also became central for my understanding of who I could be in the task of conducting the study.

The described methods enabled me in getting access to observations and in forming plausible interpretations of the observations. However, the fieldwork was not always as straightforward as it might seem. The challenges will be addressed in the next part.

3.4.3 EXPERIENCING AND HANDLING CHALLENGES OF FIELDWORK

Performing fieldwork does not just involve getting out into the field and sampling information. The fieldworker needs to develop legitimacy to be in the field. He or she also needs to learn what can be useful information and what is not. The fieldworker and the informants also need to develop some form of transaction that is experienced as meaningful to both

parties, and this demands time and effort from both parties. I will address some of the challenges I experienced in my fieldwork and how I handled them. I start with role development. This is central to gaining access to different areas of the field.

3.4.3.1 Identities and relationships as access providers

As my initial contact with the company was as researcher, this was the only formal status I had in relation to the informants and stakeholders throughout the fieldwork. However, in addition to this formal status, I also developed and was given a number of informal roles through transactional situations, some permanent, some more situational and fluctuating. One of the first informal roles I had was outsider. This role answered to the complementary role of insider. As an outsider, my access to some situations was limited by the insiders. On the other hand, as an outsider, I could also ask for explanations and help to make sense of what happened. I was also easily forgiven for not adhering to the norms as a newcomer and outsider.

The researcher role was again interpreted in various ways. I received knowledge of one of these interpretations as I followed my key informants at a design and innovation seminar. My informants met a previous colleague and presented a newly employed colleague to the previous colleague. Then the previous colleague turned toward me, asking, *"And who are you?"* One of my informants replied, *"Oh, she´s just our shadow. She follows us around."* Although this interpretation was new to me, I was actually quite comfortable with it. To me, the comment expressed a relaxed approach to having me "following them."

Being present in transactional situations, I also played the role of participant in social processes. This role had rights and obligations that I needed to understand. This meant, for example, that I could and should participate in small talk while waiting for a meeting to begin, but not take part in task-related discussions in the meeting.

I tried to develop roles that could be useful in obtaining a better understanding of the innovation processes. One of these roles was

apprentice. This role is often described as useful for learning both the explicit and the tacit aspects of a trade or role because an apprentice needs to be instructed in both explicit and tacit knowledge (Fangen, 2004; Nielsen & Kvale, 1999; C. Wadel, 1991). However, both the informants and I were uncertain about how this could be accomplished in practice. It was first when one of the product developers offered to allow me to follow her in the casting department that we began to develop a form of apprenticeship, although on a very limited scale.

I was also offered roles that I refused. One of these roles was the expert role. I had several reasons for refusing this role. First, I did not see that I knew more about how they should conduct their tasks than they themselves did. Second, if I had "played along," taking the role of expert, this would probably have reduced my possibilities for being let in on how my informants actually performed their tasks and for sharing their reflections with me about why they did as they did.

As a natural consequence of following mainly people working in the NPD department, I might also have been given the role of “belonging to the NPD department.” This might have provided me with relative freedom in moving around in the company, with people from the NPD department, with others, or on my own. Having this role might also have led to creating distance from other potential informants.

Over time, I also developed closer relationships with my informants, especially key informants. This is a natural consequence of transacting frequently and closely over time. As I also began to be included in backstage-situations, we also developed back-stage roles. By this, I mean that many of my informants also began to treat me as an insider and confidant, a person they could involve in both the preparations before “performances” and the evaluation of performances afterward. This also often implied creating distance between my own “frontstage” role and performance. The relationship as confidant could also overshadow the relationship of researcher-informant, implying a form of confidentiality other than researcher. This relationship was also relatively balanced in terms of power and in terms of who took the role of listener and who

took the role of teller. It might be that the role as outsider over time also contributed to the backstage role, as informants might have felt that they could air themes with me that they could not discuss with their colleagues as easily due to potential conflicts with their formal role performance. For several reasons, I never felt that people used me to take sides in a conflict. First, as a researcher, I had a conscious attitude about the kind of conversations to which I would contribute. Second, the informants did not appear to need such a role performer, as conflicts over tasks were aired openly. This apparent right to challenge, oppose, and speak one´s mind might have reduced the need to let off steam.

I was neither taken to be in alliance with or under the control of the board or general manager. In fact, I had no direct contact with board members (except the product developer). The general manager did not imply that I should report my findings to him or that I should in any way relate to him as anything other than one of the more distant informants. All formal and practical issues were resolved with my formal contact person, the NPD manager.

As I am interested in design and product development, it was easy to engage in following the work tasks in the NPD processes. Sometimes, I felt I had been too involved in a discussion or too interested and thus had not maintained a professional distance from the field. One time when I expressed my gratitude to one of the key informants for including me so openly in the work, she replied, *"Oh, but you are so interested so you are easy to include. We would not have done that with an ordinary researcher."* My informant showed me how the role as "interested" was a role that was legitimate and gave me access to more interaction than "the distant researcher" did. Thus, this also serves to illustrate how informants and researcher can judge a possible role differently.

The most dominating roles in the fieldwork were the role as *researcher* and the role as *participant in the social interaction of the department.* From time to time, these two roles collided. For example, some of my key informants were pressed for time and delegated the task of painting some boxes for use at a trade fair. The painting had to be completed the

same day, but everyone was occupied with other pressing work. As a researcher, I usually followed, more or less, in the chores my informants at the moment did and thus would not do anything my informants did not do. On the other hand, as a participant in the interaction, I felt the need to volunteer to paint the boxes, as I was the only one "with no plans for the day." I did not volunteer nor did the others ask me to do it. If I had volunteered, I would not have been able to do my work as a researcher following my informants. On the other hand, conducting fieldwork is also about taking part in a community over a period of time and might demand some effort not just directed toward one's own considerations. In hindsight, I do not see why I should not have helped out with the painting. As such this also serves as an example of how I in many situations in the fieldwork became overtly self-conscious in conducting my role as researcher.

The development of various roles was important in gaining access to different arenas to explore how informants developed meaning and conducted leadership. However, the ability to start noticing the more tacit understanding of the work depended on my ability to take on the attitude of my informants in interpreting what was going on. This is what I will address in the next part.

3.4.3.2 Plausible interpretations through "the generalized other"

As I started with my fieldwork, I needed - in cooperation with my informants – to develop an understanding of how they saw the world from their points of view.

The process of learning to take on the attitude of my informants when interpreting what was happening in the innovation work played out in several ways. In the beginning, the problem was that I felt I understood everything that happened. This might be one of the problems with performing fieldwork in one´s own culture (C. Wadel, 1991). When "the field" is the same as the society the researcher is part of, it is easy to think that one understands what happens without questioning one's own

assumptions. In my fieldwork it was first when I was more actively participating that the possibilities for exploring both my own assumptions and my informants´ interpretations evolved. Through my own mistakes, faults, and misunderstandings in the field, I had to reassess my previous interpretations to make sense of what was happening. These inquiries often led my attention to details that I earlier had missed. What both spurred and informed my reinterpretations was how the informants responded to my acts. When the informants responded differently than I expected to my gestures, I reassessed my own understanding of what was going on. Another way to explore my inquiries was through reflective field conversations with my informants where I could ask about what I did not understand or ask for informants' interpretations of what had happened. Over time, I developed an understanding of what was happening beyond what was explicitly stated through speech and gestures. I developed an understanding for what was of importance, how newcomers misunderstood, and what they actually were expected to do.

Taking on the attitude of the informants was not just something I did in direct transactions with them, but was maybe even stronger when I wrote up my field notes for the day and when I wrote and rewrote the various versions of theme documents, chapters, and the whole document. Through inner discussions, I took on the attitude of the informants in my selection of presented empirical material, in my interpretations, and in determining whether something was worthy of my focus.

When I discussed observations I had made in the fieldwork with my supervisors or colleagues, I took on the attitude of the informants when explaining why this or that observation was important in understanding various aspects of the NPD work. In conversations with others who had not developed the attitude of my informants, I was able to express more or less explicitly interpretations that at the beginning I was less capable of grasping.

Developing the ability to take on the attitude of the informants was thus imperative for interpreting my experiences in the fieldwork. However,

the closeness and development of identification with the informants could also be problematic.

3.4.3.3 The need for - and challenges of - closeness and distance

Despite the importance of developing closeness to the field (Fangen, 2004; C. Wadel, 1991) – for accessing transactions and making plausible interpretations – this closeness can also be problematic and even constrain the ability to clearly select, interpret, and present the findings in a purposeful manner for the research purposes.

One challenge with developing close relationships with informants can be a developed sensitivity for what the participants might think or feel about the interpretations made in the study. At times, I felt very sensitive about this. In hindsight, I understood through direct discussions with the informants that the "generalized other" I had developed in relation to my informants was much more sensitive than my informants were in reality. Nevertheless, these "inner discussions" included other "generalized others," such as colleagues, supervisors, and the university community. Taking on the attitude of these latter representations enabled me to divide between the interests and focus of my informants and the focus for me as a researcher.

The needed distance to divide between the focus of my informants in their work and my research focus was also something that came with the time span between the conducted fieldwork and the finished written thesis. Time also provided distance from the observations and findings, making it easier to dismiss themes, illustrations, and "de-railings" that made the thesis too broad in scope.

Temporal and relational distance was also central to my ability to get out of the field. Knowing when to get out of the field is an acknowledged challenge because it might not be possible to find a natural ending point. A rule of thumb for when to leave the field is when the researcher has reached some kind of saturation of meaning (Fangen, 2004) or, in other words, when one feels that the observations made are merely

confirmations of what one already has found. In my fieldwork, it became difficult to find a natural ending point. Where did the meaning-making in a project stop? It never stopped; it influenced various tasks and processes going on in parallel and following events. Wasn´t it also this development of meaning across tasks, relationships, and time I was interested in studying? Yes, it was.

Then, for a longer period of time, I had to put the study on hold. The result was that when I returned to the company, I felt more distance from both the various projects I followed and the fieldwork itself. I had not lost contact with the informants, but I saw that they also had moved on. Some people had left the company and others had come onboard. There were new projects, and some of the projects I had followed had been completed or developed into other projects. Now, I had reached a natural point of "letting go" of the field. After this, I concentrated on "finishing up the loose ends," clarifying issues, and getting additional information about themes I wrote about.

Before going into how the project developed and the process of writing up the process into a thesis, I will address two challenges connected to field conversations in terms of what to discuss with my informants and the temporal aspect of discussing interpretations with informants.

3.4.3.4 Challenges in field conversations

I experienced as challenging mainly two aspects of the field conversations. The first is related to discussing possible hypotheses or ideas about possible connections with my informants. An example of this is taken from the first year of fieldwork, where I and several of the designers were gathered waiting for a meeting to start. While we waited, I tried out some ideas I had around some of my observations from situations in which they had taken part. The ideas concerned how the participants appeared to use humor as a form of relational work in meetings. The participants confirmed my ideas and added comments and elaborations. I also discussed these ideas with other participants, and in some following meetings I noticed that one of the participants smiled in

my direction every time a humorous situation occurred. After this experience, I became much more careful about discussing possible hypotheses and speaking directly about the kind of observations I had made. I was worried that participants might start to "produce" data or become overtly self-conscious about certain themes.

I also developed relationships with some of my informants that were more reflexive in form. Taking part in such conversations also demanded a certain interest and ability with the informant to reflect on events from some distance. This meant, for example, reflecting on what happened and drawing parallels and contradictions without defending own actions or trying to smooth over conflicts.

Another problem was more an issue concerning temporality. As the need for more reflexive discussions appeared to increase at the end of the fieldwork and also into the writing phase, the time span between events and meaning-making related to the events also increased. This led to some challenges. Reflection on events at the time they occur is not the same as the understanding one has about what happened in hindsight, developed years after, when one can also take in the actual consequences of the events. Discussing events a long time after they occurred often made the informants understand the situation differently, and I sometimes was unsure about what to do with this different understanding. Should I stick with their first interpretations or alter my working hypothesis to better fit their later understanding? I decided to use the previous interpretations when interpreting the reasoning behind the following actions taken. However, the latter interpretations gave me a better understanding of how informants reinterpreted the past in the light of new events.

3.5 FROM OBSERVATIONS TO WRITTEN THESIS

The process of writing up the thesis is closely connected to the process of developing focus themes, reconsidering the theoretical basis and ontology, and several rounds of analysis. I will here describe how I came from empirical raw material via interpretations and analytical work to a

finished written product. As I have addressed the various aspects of conducting the fieldwork, I will concentrate on the process of going from field notes and experiences in the field to developing plausible understandings of what happened.

Early in the fieldwork I categorized findings and mapped them in relation to various NPD processes, projects, and work tasks. As I initially based my understanding of innovation processes on the evolutionary perspective represented by Aldrich (1999), Burgelman (2002), and Kanter (1996), the work tasks were categorized as *variation, selection, retention,* and *struggle*. However, although I had considerable empirical material on all of these tasks or phases, it was difficult to use them in a meaningful way. In practice, all phases could be touched upon in the same sentence. It was also very difficult to separate the various products and projects from one another, as they were often intertwined.

I also described work methods, tasks, who took part in what tasks, and what function various meetings and procedures appeared to have in the work. Due to my relational approach, I also focused on how relational work was conducted in the innovation processes in the sense of how trust was expressed, how support was given and received, and how participants developed learning relationships and communicative relationships. However, as the research problem was more the general idea of adding a relational approach to the evolutionary perspective, there was no clear direction on how the material could be used. I could say a lot about relational work in task-related work, but so what?

The development of more specific themes came as a response to various calls for papers for conferences. I developed six conference papers with the following themes: *Leadership as relational enabling* (Lindland, 2008*)*, *Taking a relational approach to ambiguity* (Lindland, 2009b)*, The physical object as mediator for meaning-making* (Lindland, 2009a*)*, *Strategy development through inquiries* (Lindland, 2011*), Relational aspects of normative management models and professions (Lindland, 2013a),*

identities and enabling leadership[12] *(Lindland, 2013b)*. The development of these papers also influenced the analytical categories I devised, and these themes influenced the research questions I posed. The overriding research problem was still quite general, focusing on relational enabling and constraining in innovation processes.

At one point in time, I also changed the initial strategy of writing an article-based thesis to writing a book. The reason for this was that the empirical material, the context, and the theoretical and methodological assessments were too comprehensive to cover in articles. I needed to "write the whole thing out" before I was able address more specific research themes. Writing a book provided the possibility for elaborating on the numerous themes that emerged through the field-work, and try to connect them in a way that would represent the reality of the NPD-work, while still simplify it so that it could be possible to comprehend. Numerous rounds of re-writing where I had to "kill my darlings" underway was necessary in order to reduce complexity and make the project manageable.

From the beginning, my ontological position was no more than a gut feeling. For a time, I meant that critical realism (Archer, 1998; Collier, 1994) was the ontology closest to my own understanding. However, comments from others when I presented my project indicated that they often understood the project and my aims differently than I did. It was especially the understanding of reality as layered[13] that did not comply with my relational understanding of the individual and the social as co-constituting one another. It was during a PhD course in complexity theory that I came to understand why the evolutionary perspective and my relational approach were not compatible.

A conference call for papers that suited my findings from the ongoing fieldwork drew my attention to pragmatism. I soon saw that the work of Dewey and to some extent Peirce was consistent with my understanding

12 The two last papers were developed very late in the writing process, and have for this reason had lesser influence on the development of the thesis.

13 When I say "layered," I mean the understanding of reality as divided into individual, group, and societal levels.

of a relational approach. My ontology became clearer to me, although I did not label myself as a pragmatist or a complexity researcher. I drew on several theoretical contributions, but the ontology was based on the dialectical understanding of Hegel (1807), expressed in the transactional and temporal understanding of reality of Dewey (Brinkmann, 2006; 1934, 1938) and Mead (1932, 1934) and the focus on interdependence found in their work, in addition to the work of Elias (1939). Radical process thinking and process sociology (Elias, 1939; Stacey, 2003) are good expressions of this.

I now had a clear ontology, an overriding research problem, and four themes with associated research questions, but it still appeared to lack a clearer angle. The thesis had been written into various chapters and sub-chapters when my supervisor asked me to go through the empirical material once more, doing the categorizations over again. Were there any patterns in how they worked? Well, the most dominant pattern was that there was no pattern. More precisely, there were patterns of contradictions. Informants said one thing and did another. They claimed one truth, while upholding another. Some norms were valid in one situation, but not in another. I labeled these contradictions as paradoxical expectations. I came to realize that the experiencing and handling of paradoxes might be the most interesting finding of this study. Maybe this should be the main research problem? However, to address this in a meaningful way, I needed to address how meaning and meaning-makers developed, how ambiguity in general and paradoxical expectations, in particular, were handled, and how employees conducted leadership in general and specifically as related to this theme as they all interconnected in the transactions.

Again, the thesis became too extensive. It had to be simplified and streamlined. I was advised to try to structure and illustrate my findings by describing one NPD process from beginning to end. However, again, this did not describe the work I had followed to any extent. First and foremost, there were numerous processes, projects, and products that developed in parallel and overlapped, making it difficult to separate them. Work tasks that apparently were related to one product, could in

reality be more related to another project. This was a complexity that I could not remove without removing a central aspect of the findings, namely that meaning making developed across projects simultaneously, not just within the specific project. However, I finally let go of the extensive focus on ambiguity in its various aspects and also the focus on strategy development as this was covered by focusing on meaning-making and leadership.

One problem with structuring the findings and the discussions was that the same themes appeared to be repeated over and over again, with a slightly different angle to every research question. There was also something that did not function so well in the connection between research questions and research problem. Through discussions, I realized that my thesis was basically about the conducting of leadership in NPD work, and this leadership could not be separated from meaning-making and meaning-makers. This realization made it easier to restructure the research questions and change the research problem into its current form. In this form, I address the use of physical objects in meaning-making in NPD work as the first building block. The second question concerns how participants conduct identity in NPD work. These two research questions are closely connected, but to highlight the impact of identity, I have chosen to address them separately. In some of this meaning-making, paradoxical expectations were expressed in relation to the interpretation of physical objects, the conducting of identity, and other aspects.

The thesis in its current form was spurred by discovering the parallels between my focus of interest and the work of Uhl-Bien et al. (2007) and Brown and Duguid (1991, 2001), focusing on the need to enable leadership and the non-canonical knowledge developed through communities of practice. It has been challenging to find relevant theories and research contributions to discuss my findings and interpretations, not because there is a lack of theoretical and research contributions, but because they are often within specific discourses that differ from mine. This has often led to my work being derailed into literature searches and writing themes that have been more interesting for other discourses or

forums, such as theoretical articles or research articles. I have thus kept the discussion to a few contributions from other "schools," such as the tacit knowledge theme, knowledge organizations, meaning-making and the role of identity in meaning-making, and the conducting of leadership.

Having described how the thesis developed from a research theme into a written product, it is time to address the research quality of the study.

3.6 ASSESSING THE RESEARCH QUALITY

How to assess the research quality of a study in social sciences has been thoroughly debated across decades, as the dominating focus on validity, reliability, and generalization, inherited from quantitative studies in natural sciences, has often been understood as less applicable to qualitative studies in social sciences (Creswell, 2007; Fangen, 2004; Marshall & Rossman, 2011). What appears to be obvious in the debate is that the criteria for assessing research quality must be aligned with the ontology and epistemology that informs the study. An approach that has often been used in qualitative studies is from Lincoln and Guba (1985), who suggested the use of credibility, dependability, confirmability, and transferability instead of validity, reliability, objectivity, and generizability. Their means for securing validity and credibility is prolonged engagement, member checks, triangulation of sources, theories, and methods, and peer briefing. These suggestions are also found in Creswell (2007, pp. 207-208), who provided eight validation strategies consistent with the suggestions of Lincoln and Guba (1985), but also added external audits and thick context descriptions, clarifying bias from the outset and revising initial hypotheses until all cases fit.

This study is characterized by abductive reasoning and informed by the five virtues of abductive reasoning pointed out by Martela (2011). These five virtues are consistent with Creswell (2007) and Lincoln and Guba (1985). I will now point out what and how I have conducted and reported on the study to live up to these virtues, as well as how they connect to the strategies of Creswell (2007).

The five virtues are an attitude of holding theories lightly, reflective self-awareness, reflexivity in both research and reporting, iterative steps, and transparency and honesty. The attitude of holding theories lightly can be seen in how I abandoned my initial plan of adding a relational approach to an evolutionary perspective on innovation. This understanding was abandoned because the categories developed from the evolutionary perspective could not encompass the experiences I had in the field. Another reason for abandoning the evolutionary perspective was that it did not fit with how I saw reality. At one point, I also tried to fit the study into critical realism, which was also difficult. Hence, although much of the ontological basis and theoretical understanding of Mead (1934), Elias (1939), and Wadel (1999) was there all along, the process of exploring how this ontology can be labeled and how it aligns and contrasts with other relevant theories was complicated and led to numerous revisions of themes and working hypotheses. Although theoretical understandings and approaches have been central in exploring observations, and in drawing attention to specific aspects of the NPD work, it has first and foremost been the development in the "field" that directed the development of themes, and thus also the search and inclusion of relevant research on these themes.

I have described my pre-understanding of the study and the field (in part 3.3.1.) and also tried to let it show in the empirical material where my pre-understanding collided with the observations I made. Making my pre-understanding clear can be important in understanding the choice of focus, but also in assessing whether I had special agendas in my research or connections that can make my study biased in a specific way. The ability to take on the attitude of my informants in interpreting the observations has been central for the validity of the interpretations. This also means that the development of Me´s in relation to the informants has become a central part of the reflections I made during the study. Both my informants and I developed during the fieldwork, and this also influenced the development of events. An obvious danger in conducting extensive fieldwork is that the researcher "goes native" (Fangen, 2004). This has also been something I have reflected on, as I became fascinated with and fond of both the work and the workers in the company. However, to write

about the NPD work and the participants – and about me for that matter – as closely as I have, I had to create distance from the work, the participants, and myself to "write it out." My wish to and need to be taken as a "proper researcher" - detached, objective, calm, and withdrawn - led to my occasional rejection of friendly gestures. In hindsight, I do not think it is possible to be emotionally detached from the fieldwork and one´s informants. It is more about finding ways to cope, both during the fieldwork and in the process of transforming the observations from the field into something accessible to anyone interested.

Self-reflectivity and the adjustment of hypotheses during and at the end of the study are strategies that Creswell also pointed out. According to Martela (2011, p. 12), these two virtues, an attitude of holding theories lightly and reflective self-awareness, are especially connected to an abductive mode of reasoning, while reflectivity, transparency, and iterativity are especially connected to the scientific research process.

Abductive reasoning as research involves searching for the most plausible understanding of a phenomenon. This demands reflectivity not just in terms of interpreting observations, but also in mulling over what kind of knowledge one actually is producing. Reflectivity in this study has been about interpreting observations, categorizing them, re-categorizing them, taking in new theories, abandoning others, changing focus themes, following up inquiries, and choosing what to take in and what to leave out. The reflections in this study were developed through field conversations with my informants, in discussions, especially with my co-supervisor,[14] and in discussions with colleagues who have conducted fieldwork. Thus, these reflections have an ethical dimension, assessing what empirical material is best suited to provide insight into the observations while still respecting the informants and their integrity. There is also the dimension of usefulness; how can the study be useful and meaningful for the informants and others in practice? Although this has not been a form of contract research, the research should have meaning for the informants.

14 C.C. Wadel.

Methodological, theoretical, and sources triangulation is usually focused on as central to case studies, especially for securing validity and confirming the findings. This was also the case in my study. However, the triangulation also came to be useful for spurring inquiries and reflections. For example, something to be done in a special way in one setting could be interpreted in a certain way in isolation. However, when this special way of doing something did not repeat itself in similar settings, the first interpretation required revision. Contradictory observations in situations that appeared to be similar led to deeper attention to aspects of situations that often were overlooked, thereby enabling me to develop deeper insight into what the work really was about and how the work actually developed through meaning-making.

I discussed interpretations of meetings, situations, and development of events with informants during the study to the extent that I developed an understanding of the probable meaning developing in the transactions. However, I did not let informants read the thesis or parts of it for approval. The need for free research and simultaneously giving back the research results to the informants has been a difficult matter with strong ethical considerations. Before completing the thesis, I chose to solve this by involving the main informants, going through the main themes, theoretical angling, and main lines of the empirical material to check whether there was something secret or relationally difficult about using these examples. This was also done to check whether my understandings and conclusions resonated with how the informants experienced their work. Apparently, my findings, interpretations, and conclusions were familiar to them. However, they had not necessarily thought of them the way I had. This might have to do with the theoretical perspectives I put on their work and experiences.

Although I had plans for what to study and how to conduct the research from the outset, the research had a typical iterative character. As the study developed, I adjusted the research to the themes that emerged as central in the work I followed. As I conducted the fieldwork over a time period of four years, following the NPD work for approximately 900 hours, I had time and opportunity to develop my interpretations of

observations, to structure, restructure, and reconsider focus, themes, and research questions, and to go back to the field and follow the directions and focuses that developed. The comprehensiveness of the fieldwork and my willingness to follow "the field" rather than my initial agenda contributed to enhance the validity and trustworthiness of this study.

To provide transparency, I have reported on my observations and the development of the study in several ways. I have made use of thick descriptions and also provided insight into the reflections I have made. The development of the study in terms of how the focus, themes, research questions, and research problem evolved has also been described in this chapter. The company in which the study was conducted is also named. I have thoroughly described the use of methods, what role I played, and the context of the work I followed. The purpose has not been to convince readers that this is the only way to interpret the development of NPD work. Rather, it has been to provide an opportunity for readers to assess the study and whether the conclusions drawn can be understood as plausible and interesting for practice, given the research conducted and the theoretical basis used. Reporting transparently on both findings and how the research was conducted is related first and foremost to assessing the reliability of the research, but also to its credibility.

With the exception of Creswell´s (2007) strategy of using external audits, the other seven strategies for securing validity are addressed thoroughly in this study. However, the results of this study will never offer an objective truth, but rather my interpretations of how and what meaning developed in the NPD work I followed. On the other hand, the study also does not offer a totally subjective understanding, as through the extensive fieldwork I developed the ability to take on the attitude of my informants toward the transactions. The iterative aspect of the study also let the developing meaning direct the development and reconsiderations of the focus and research problem.

3.7 ETHICAL CONSIDERATIONS

The study that this thesis is based on is not a type of research that typically would be seen as risky to participants[15]. I did not expose the informants to any potentially harmful experiments; nor did I map their political views or private lives. The harm we can imagine would include sanctions in the work community, changes in work relationships, and unwanted reinterpretations of oneself. It could also be feelings of being misled or exploited, which is why informed consent is so vital in research. As presented in section 3.3.3., I made an effort to secure informed consent. Nevertheless, there are many challenges and pitfalls in doing this. Another challenge was the assessment between giving the participants as much anonymity as possible and securing as much transparency as possible.

3.7.1 CHALLENGES OF FULLY INFORMED CONSENT

I experienced mainly three challenges in my efforts to acquire informed consent to participate in my study from my informants. These challenges related to asking for consent from participants at the outset where neither the participants nor I knew what the study would develop into, the challenge of newcomers and "outsiders" taking part in the transactions, and, finally, the challenge of balancing the need for informed consent and free research.

As I started with my fieldwork, I informed the participants about the study, its theme, and what I aimed to research before I asked them for their consent to participate. The challenge was that my understanding of what the research could lead to was as unclear as anyone else's. The way I handled this was to let the informants direct and control what was permissible for me to take part in. Getting to know the participants and

15 I contacted Norwegian Social Science Data Services (NSD) before conducting the study in order to check out whether the study would be subject for notification. After having described the prospective study and what kind of data I would be gathering, I was told that it would not be subject for notification, but I was encouraged to follow their guidelines for how to handle and store empirical material. These guidelines have been followed throughout the project.

the transactions, I also developed an understanding of what they were more or less comfortable letting me in on. Thankfully, I had both inclusive and open informants, so I was seldom excluded from transactions. In more informal transactions, I needed relationships that could carry into the transaction so that I could participate in a natural way. This excluded me from more informal transactions between informants with whom I had less close connections.

From time to time, "outsiders" and employees who had not taken part in the study earlier took part in transactions. These informants had not been asked for consent initially, and I had to "fix" this underway. In planned situations with external participants, I got my key informants to ask beforehand about my presence and my agenda. This was done to various extents. The meeting leaders often told me that I made too much of it. In one situation where we took part in a meeting "out-house," I had asked the leader of "our delegation" to ask the meeting hosts about bringing me into the meeting. I asked the same morning as the meeting was to be held whether I could take part. *"Yes, it´s OK,"* the leader of the delegation said. When the meeting started and he introduced me to the rest of the attendees, I was introduced as a PhD student studying the company and accompanying employees in various situations. I understood from the situation that he had not contacted them about me, but no one appeared to react negatively to my presence. When employees within the company came to be involved without my having asked them beforehand about consent to my presence, I informed them about my study and asked for their consent to participate to the extent that I actually used their involvement in the study. This was done in hindsight.

The challenge with my key informants was not that they were not informed or that I did not seek renewed confirmation in situations where their understanding of what I was studying appeared to have been revised. To me, the problem was that my informants could not know exactly what I would "use" from a meeting or how I would interpret and couple one event with another. I did not know this myself before I started constructing the "story" on which I decided to focus. It is a principle in research that the findings should lead back to the informants. However,

this principle raises some challenges. First, some findings might be illustrated by examples that can be troublesome for participants and thus should not be pointed out to participants (Røthing, 2002). I have chosen to use examples that I see as less sensitive and personal than other examples. However, again, there is the balancing between using the example that best illustrates the point being made and considering how participants might feel.

I could not reveal too much of my observations either, as I did not want my informants to develop self-consciousness and start "producing data." Fangen (2004) pointed at this as a challenge, arguing against revealing too much of the theories and hypotheses the researcher develops to participants, as it can lead to their becoming self-conscious. Another reason for not revealing too much of the observations to the informants was that participants might not be comfortable with my noticing and pointing out certain specifics.

Yet another challenge was the difference in focus between my informants and me. While my informants were focused on understanding what to do next, negotiating meaning, and challenging meanings to deliver good results, my focus was on *how* they actually did this. I was interested in contributing to a broader understanding of how meaning-making in NPD work is accomplished in practice, explored through relational theories and perspectives. My informants were interested in getting their job done as well as possible. Hence, the examples I have used to illustrate my findings might be understood as "beside the point" by participants, but for highlighting specific aspects of meaning-making and leadership through meaning-making the examples became central. These differences in focus and goals were something I took up with the participants when at the end of the process of writing up the thesis I presented the main lines of the thesis to the key informants. Participants do not necessarily need to agree with the interpretations (Fangen, 2004, p. 239). This need not mean that the study lacks trustworthiness. However, presenting a story and line of argument participants would find hard to live with would, to my understanding, break with the principle of doing no harm.

I have now pointed at three challenging aspects of securing informed consent, one being that it was difficult to foresee how the study would develop at the outset. The second was the challenge of ensuring that external participants and participants taking part in more coincidental moments were asked for informed consent and the extent to which this was natural to do. Last, I let my observations and analysis of the observations direct the focus I developed for my thesis. This led to a surprising focus for me and maybe also for my participants. The way I handled these challenges was by weighing the demand for openness against the demand for ensuring that the research was free but did not interfere with the transactions too much. In the next part, I will address the theme of securing anonymity for the participants and whether it is necessary.

3.7.2 IS FULL ANONYMITY POSSIBLE AND IS IT ALWAYS NEEDED?

Anonymity is seen as central for protecting informants against unwanted consequences of taking part in research projects and daring to speak freely. However, is full anonymity possible, and should it be striven for at any cost? I will discuss the aspects I found challenging in protecting the informants while at the same time balancing other considerations of importance. The aspects I have focused on are how to secure anonymity within the case host, the company, and the balance between securing anonymity and at the same time securing transparency. These aspects basically involve anonymity within and outside the case host.

First, after consulting key informants and the company management about whether to keep the company name anonymous or not, I have decided to reveal the name. The reason for this is that the company has so many relevant characteristics making it easy to identify that it becomes challenging to remove the characteristics without also taking away important contextual information. Second, transparency is weakened by not revealing what company hosted the case study.

In this study, the informants were not granted full anonymity. Although their names are left out, the number of people holding certain positions

and conducting certain tasks in the company are often so few that it is possible to pin the identity of the informants down to a few. Additionally, certain persons have often been more central than others in specific projects, making the narrowing down even narrower. This means that even if I concealed the name of the company and all its characteristics the participants would in many examples recognize themselves and each other from descriptions of the circumstances. Thus, the question of and need for anonymity was not an issue, at least internally in the company. However, this does not mean that I would reveal what one participant told me in confidence to other participants to explore the response it would evoke. Again, this has more to do with the normative rules for social conduct than research ethics.

Anonymity outside the case host is more relevant to consider and to a large extent easier to achieve than internal anonymity. I have reduced the references to the various participants to more general references such as, participant 1, participant 2, one of the product developers, and so forth, without changing the meaning of the situation. But for outsiders not having taken part in the situation it is difficult to identify who I am referring to.

I was not asked to sign any confidentiality form in the company. However, to make clear how I would use information that gave me insight, I wrote an orientation of how I planned to handle possibly sensitive information[16]. In hindsight, I see that in this orientation I treated almost any information I could obtain through the study as sensitive. However, most of the scenarios I had expected never materialized. Very little of the information I had access to was sensitive. Also, according to several of the informants, I made anonymity a bigger issue than it needed to be. As a consequence of this we came to an understanding of me checking out whether there was something sensitive in what I described, but I did not let the informants read through the empirical part before finishing the thesis.

16 An information-letter about how I would treat information I got access to was given to the company before I started out with the study. This is found in appendix C.

The ethical issues I have discussed are dilemmas in that they must be resolved also in regard to presenting the findings as truthfully and comprehensively as possible, without leaving things out for informants' sake. The other issue is the need for traceability. While there is a wish for anonymity, there is also a need to show where the findings are collected to increase the study's transparency. These dilemmas have been apparent throughout the whole writing process. In the end, I assembled the key informants and explained the main lines in the thesis as it had developed, the theoretical approach I used, and the main conclusions I reached. I also explained what empirical material I used to make it clear to the informants *how* I had used observations in the thesis and checked whether the examples could be sensitive in any way. In selecting examples to illustrate the findings, I assessed the sensitivity of the examples. Presenting the information to the key informants was thus assurance of not revealing something that could create difficulties for someone.

3.8 REFLECTIONS ON METHODOLOGICAL APPROACH

What did I gain by my research strategy, and what did I possibly lose? First and foremost, I needed to conduct a case study because I wanted to develop insight into how the meaning-making in NPD work was conducted in practice. The use of differing methods to study the phenomenon did not just lead to complementary empirical material; I also think it was necessary for me to develop a better understanding of what the participants in the work actually expressed. The advantages of conducting comprehensive fieldwork to the extent that I did are several. First, as the participants were involved in more or less all NPD processes underway, I had the unique opportunity to study meaning-making between, across, and as a result of these products and projects. Due to the length of the fieldwork, I also had the chance to observe how meaning changed over time, how former intentions and meanings changed due to the development of events. Following the NPD work across projects, processes, and products was initially not a conscious choice. My initial idea was to follow the work more broadly at first, and then identify a few projects and products that I wanted to follow more systematically.

However, as the products and projects were so intertwined in discussions, it became very problematic–in fact, meaningless–to separate the development of different products and processes.

The time invested in the fieldwork also had an important impact on the validity of my observations, interpretations, and conclusions.

Frist, my informants and I were able to develop broader role repertoires with one another, making it possible for my informants to include me in "backstage situations" where an outsider ordinarily would not be allowed. Second, I developed the ability to take on the attitude of my informants in interpreting situations by internalizing how the world looked from their point of view. Third, I had the time to try out my initial theoretical approach, to reconsider it, and to reconsider my analytical choices and themes. Fourth, due to the substantial amount of empirical material, I could better rely on my understanding of what was central or not in understanding the meaning-making and leadership in NPD work.

The disadvantages of conducting such a comprehensive study were connected to the amount of empirical material I accumulated. It took many rounds of reducing the number of themes and aspects I wanted to include to do justice to my findings, and simultaneously make it possible to others to grasp. This led to many simplifications of very complex research material. The comprehensiveness of the empirical material has also led to that the main focus and contribution in from this thesis the provision of empirical material, rather than on theory development.

Some aspects have also been lost with the chosen research strategy. First, this study cannot provide a recipe for how to develop a successful product as such. In fact, one of the most central findings from the study is that innovation processes cannot be understood and assessed in an isolated manner. Hence, I have identified specific measures for neither success nor failure. Thus, the study cannot contribute to any quick fix for how to enhance profitability and efficiency in NPD work.

There are also limitations to the generalizations one can draw from the study. First, the way the NPD-work was organized with the same

participants working more or less together in the development of all the products and projects, makes it a special case in innovation-work. This means that many of the findings in this study are closely connected with the way the work was organized, and how this gave room for meaning-making across tasks, products and projects. Hence, we cannot generalize the findings to NPD-work where the work is more separated into differing project groups and tasks.

Secondly; there is not deterministic connection between case and effect here, in the sense that if the same gestures and responses are repeated in exactly the same way, the result will be the same. It will not, because we have moved on, our experiences and who we are is under constant development, making any emerging situation more or less different than the previous situation. In other words, the fruitful and successful developments, as well as the failing situations, I have presented in this study will never repeat themselves in exactly the same way.

However, some patterns and aspects of the findings can be transferred to other innovation work, to knowledge work, and to learning situations, at least for exploring the themes further. That is, the social aspects of meaning-making also influence the task related work, and vice versa. The second aspect is the interconnectedness between the numerous projects and processes that are under development in parallel and in succession. However, the experiences from this study can only be transferred to other contexts and situations that also have organized their work so that more or less the same participants are involved in the work across projects and time. On the other hand, it might contribute to the exploration of NPD-work where participants do not take part in the same projects and processes by focusing on how this way of working influences on meaning-making across products and projects.

In the next chapter, I will present the contextual aspects of the company that served as the case host and describe central aspects of the NPD work I followed in my fieldwork. This will become central for understanding the findings presented in Chapters 5, 6, and 7.

4 THE COMPANY – CONTEXT, ORGANIZATION, AND CULTURE

The aim of this chapter is to provide insight into the conditions and aspects that make up the framework for the transactions where new product development (NPD) work is conduced. Thus, it functions as background and reference for interpreting the meaning-making transactions I will present in Chapters 5, 6, and 7. Also, because I do not focus on a specific process or project in this thesis, but on NPD work more generally, there is the need to understand what this work entails. Again, to understand what NPD work entails, not just formally but also in practical meaning-making, it is necessary to also have some insight into production in the company and the characteristics of the industry in general.

I will present the company and its environments in which the NPD work is initiated, developed, and realized. There are two themes here. The first is what characterizes the industry – both historically and what strategy and role the company has chosen in the market. I will also go into what characterizes the company and how the work is organized. In the latter part of the chapter, I will discuss more specifically the contextual aspects of the NPD work: how it is organized, what it entails, and who takes part in it. Finally, I describe the characteristics of the company culture. But first, I will start with the historical basis for the industry and situate the company in this tradition.

4.1 THE PORCELAIN INDUSTRY – HISTORICAL AND CURRENT CHARACTERISTICS

The historical background and current trends in the porcelain industry, provides a frame of reference for understanding the situation the case company experiences in the industry and what the trends of adjusting to a global market have been: automation of production and outsourcing to low-cost countries. This serves as a contextual backdrop for

understanding the position and the adjustments the company has made, which I will go into in 4.2.

4.1.1 CHARACTERISTICS OF THE PORCELAIN INDUSTRY

The traditions of the porcelain industry go a long way back in time and have roots in China. What is termed fayance traces back to Italy in the fifteenth century, while what we term porcelain has been produced in Germany since the early eighteenth century (Rosenberg, 2001). In Europe, both Germany and England have long traditions in the porcelain industry, where several of the "old companies" still exist. The companies in these countries have often located themselves in industrial clusters, benefitting by shared competence, training of the labor force, and development of norms.

The industry has traditionally been characterized by handcrafting where crafters form a single product by hand. Likewise, historically, the products have been decorated by hand. Later, it also became possible to buy decals from producers in the form of "pictures" that were fixed to the product before the second firing. This made it easier for small producers that did not have their own decorators to decorate their products. Because many producers bought these "roses,"[17] it is not unusual to find products with the same decoration from different producers.

Recent trends in the porcelain industry have involved adjusting to a globalized market, where companies in low-cost countries can offer products at a considerably lower cost than competitors in high-cost countries. Still, they compete in the same markets. The adjustments producers in high-cost countries have made have typically been through automating production and/or outsourcing production to low-cost countries.

Automation of work tasks is now the dominant method of production in high-cost countries. A robot can produce many items of the same product, but it must be re-set between differing products. Re-setting machinery is

17 The pictures are often called "roses" as the decorations often consisted of roses.

time-consuming and demands personnel competence to make the necessary adjustments. To make the production as rational as possible, the machines and robots are re-set as seldom as possible. Long series and high quantities are thus where cost-efficiency lies.

Outsourcing is the other main way of adapting because not all kinds of production tasks are possible to automate and still achieve a good result. Today, these tasks are often outsourced to low-cost countries where labor costs are low. A possible consequence of this is that the units become bigger and fewer. Companies buy up other companies, rationalize their task functions, and make use of market positions and brand names. As the market competition is global, the closest competitors to a company in relation to customers can be located on the other side of the globe.

4.2 CHOOSING AN ATYPICAL STRATEGY

The case host in this study has neither the long history of its competitors in England, France, and Germany nor the regional placement and attachment of its competitors. The company was founded in 1941 and is situated in Norway, far from any still-existing cluster. Previously, there were some small fayance producers in the region, but they are all gone. Thus, the company is both a young actor compared to other companies in the industry and an actor that is placed outside the existing clusters. The company experienced much demand for its products during its first years of business due to shortages of almost everything during and after World War II. By 1952, the company had started exporting its products and at the end of the 1950s the export share was 10% (Rosenberg, 2001). At the same time, the volume of imported porcelain grew and thus increased competition in the home market.

4.2.1 FLEXIBILITY PRIORITIZED

In many ways, the company has followed the same development as the rest of the porcelain industry by automating several of its work tasks. Still, the production is labor intensive. It is said in the company that 52

pairs of hands have touched a decorated cup before it leaves the company. There are several main reasons for why it still is so labor intensive. First, many of the operations are difficult for machines to master. Clay is a living material, meaning that before firing the material is not stable and variances will occur. To obtain a good result, production must be done manually. This has led to some of the tasks that were automated now being reversed to more manual labor.

The second reason for the high level of hand-crafting is that many of the design-driven products developed in recent years actually need even more hand-crafting than more traditional products. I will come back to this in part 4.2.2.

A third reason for the labor intensity still being high is due to a strategic choice made some years ago. The company had to renew its machines, which required large investments. In contrast to most of its competitors, the company chose machines that could be readjusted for a specific product relatively easily. On much of the machinery in the porcelain industry, readjusting the machines from one product to another is complex. Before a machine/robot shapes clay into the form the product will have, a form or "tool"[18] is set into the machine. This form must be changed from product to product, but it is possible to make many units of a product when the right form is installed. Altering from one form to another is in *theory* not a big issue. It *can* be done relatively quickly, and it need not be technically challenging. In practice, though, such readjustments can be both time-consuming and challenging. Having employees with broad experience in re-settings, and who have a broad understanding of how the different work tasks relate to each other, is thus important for making the best use of a machine park that has this flexibility. The benefit of choosing a technology that can easily be readjusted is that one can produce a small series of a product and thus have smaller inventory and better delivery times. Although many tasks that were performed by hand earlier are now taken over by machines, there is still much hand-crafting in the production, both in creating the

18 "Tool" is the term used by the informants themselves, but the term "form" provides a better description.

products and in relation to readjusting the machinery from product to product. The reason for the high degree of hand-crafting is not confined to specific tasks, but also to assessing how the tasks can be completed. I will give one example of this: Due to high energy costs, it is important that the kilns be as full as possible when firing. Organizing the products on the oven racks is thus not just about providing a single product with support. It is also about filling the kilns in the most efficient way, making the best use of the space in the kilns to fire the products evenly and not let space go to waste. As it varies from firing to firing which products go into the kilns, this task cannot be standardized. One needs to prioritize the most urgent products and fill up the kilns with whatever products that together make the best use of the space. This demands both experience and the ability to asses differing criteria against each other in a given situation. There is thus much meaning-making in modern manufacturing processes.

From time to time, outsourcing has been aired as a theme in the company. This is not just because the company is situated in one of the most expensive countries in which to have production, but also because the region has a high demand for skilled workers for the oil industry, which can offer far higher wages than the company can. This has led to difficulties in finding skilled workers and also keeping them over time. The choice the company made is to keep the production "at home" for now and to try out a small part of the production in the Far East. Concretely, this has meant that approximately 5% of the total production has been partly[19] outsourced. The purpose of trying outsourcing initially was to find production solutions for hollowware, as it became difficult to find competent employees for this in Norway and this is the most craft-intensive work. However, hollowware represented a very small part of the total production. Later on the outsourcing project has also been motivated by a need to learn about what outsourcing could mean for the

19Partly outsourced here means that the form products are shaped and fired in a low-cost country and glazed, decorated, packed, and shipped from the company site.

ability to produce certain products and what factors might influence the actual economic result of outsourcing.

The reason for being so reluctant to outsource in a situation where almost the whole industry has moved production to low-cost countries likely has to do with the benefits of having both new product development and production at the same site. This means that the participants in NPD work have more than an abstract understanding of the production methods; they also have more direct insight into the practical challenges of producing various products and designs. Sometimes, it is difficult to understand, express, and explain in an e-mail just what the problem in producing a specific product can be and why. At the company site, production and development are placed close together; product developers and production employees can discuss and explore problems and possible solutions together by showing one another what they mean.

Hence, in contrast to most other competitors in high-cost countries, the company has chosen not to radically automate production and/or outsource it to low-cost countries. Whether the reason for this is to be found in the strategic choice of what kind of products to produce is unclear. What is certain, though, is that the strategic choices of not outsourcing to any extent and having production that involves hand-crafting have influenced what products the company has been able to develop and produce. In the next part, I will address the strategic choices made in relation to what products to produce and what markets to serve.

4.2.2 FOCUSING ON THE PROFESSIONAL MARKET

Based on the strategic choices the company made in relation to automation and outsourcing assessments, it is clear that the company cannot compete on price in a cost-focused market. The company has made two important strategic choices: to focus on professional kitchens only and to focus on product solutions rather than specific products as such. The focus on professional kitchens is addressed below, while the focus on product solutions is addressed in part 4.2.3.

In 1996, the choice was made to focus only on the professional market (i.e., from kitchens in hotels and restaurants to kitchens in nurseries, hospitals, and canteens). Professional kitchens are demanding in relation to what they expect of a tableware product; it must be of strong material, as the treatment often is rough in a busy kitchen, it must fit into rational food production, and it must contribute to a good food experience when served. The company, as a tableware supplier, offers a more or less complete range of tableware for the professional kitchen market. In addition to being functional and cost-efficient in use, the tableware also often has to contribute to "performance" of the restaurant by inspiring a spectacular serving experience.

The company's market of today can be divided in two parts: the domestic market and the foreign market. The domestic market consists of the Scandinavian countries, while the foreign market is "the rest of the world."

In the domestic market, the main bulk of products sold are "traditional" products with good functionality, a reasonable price, and high durability. Many of the product models have been on the market for decades; they are generally easy to produce and the sales figures show high volumes. This market is price-sensitive and thus the company is exposed to price competition in the global market. As the products are relatively uncomplicated to produce, they are also subject to copying by other companies. The "bestsellers" in the company belong to this "traditional" product range.

In the "foreign market,"[20] the company is not recognized for its traditional, reasonably priced products. Rather, it is the spectacular designs that are sought after. The customers in this market are often high-end restaurants, five-star hotels, and prestige projects, rather than hospitals and homes for the elderly. The products that serve the high-end market are where design and the food experience are prioritized over

20 The foreign market consists of the rest of Europe, more or less, the Middle East, Russia, South Africa, and the Far East. The American market has not been served to any extent.

storage functionality and price per unit. These products are generally more technically complicated to produce and they often require more manual labor; due to these factors, they are not so vulnerable to copying. Through the close proximity between development employees and production employees, interaction in relation to production challenges, and searches for solutions, the company has managed to develop and produce products that would probably not be possible to outsource without encountering major obstacles in production. It would likely also be impossible to produce these extreme products if the production did not allow for varying degrees of hand-crafting, following up, and adjusting for the challenges that occur. Although these products are costly to produce, there is a consumer willingness to pay a premium for such products, making them profitable for the company in terms of return per unit. On the other hand, the units sold are relatively few compared to the more traditional products.

The division between the domestic and foreign markets is over-simplified, as high-end restaurants are also served in the domestic market. In addition, of course, there are differences between countries in both taste and price sensitivity.[21] That aside, the two main market trends here described mean that the brand name of the company has different connotations in the domestic and foreign markets. In the domestic market, the brand is understood as traditional, basic, and durable. In foreign markets, the brand is understood as high-end Scandinavian design for the "insiders" of professional kitchens.

The product range and the market material are not divided according to which of these two markets are served, as the exemptions from these two trends are many. The point I am making here is just that neither the interpretation of the brand nor the products preferred, or the type of customers for that matter, is unanimous. This means that the salespersons, marketers, and product developers relate to many differing needs and wishes where the outcome of the decisions made is often not clear.

21 It is for example interesting to learn that the company, producing its products in a high-cost country, has sold its products also to customers in low-cost countries such as Bangladesh.

Having described how the company has prioritized flexibility through short product series before long product series with higher efficiency and more automation, and how it has chosen to focus on the professional kitchen only, it is now time to describe the company's NPD strategy.

4.2.3 AN NPD STRATEGY FOR EXPLORATION AND EXPLOITATION

To survive in both the short and long term, companies need to develop profitable products for the present, while also being willing to abandon present solutions to survive long term. Thus, both exploitative and explorative development is necessary for survival.

The NPD strategy of the company reflected this. The exploitation in the NPD work can be understood as the NPD work connecting to the *standard product range*. The criteria for new standard products were that they should cover a "hole" in the existing product range or address a new product request in the market. Products in the standard product range should be functional and have profit potential – directly or indirectly - either on their own or by leading to enhanced sales of other products. They also had to be able to be mass produced.

Front products formed a product category consisting of more special products. These products were developed "in their own right" (i.e., there were not the same demands for these products to be profitable or to fulfill a product need). Front products were typically more extreme and ambiguous and functionality and production costs were the lesser focus. The reason for launching these products was typically that the product council wanted to try them out in ordinary production or that it wanted to show the market what it was possible to make to verify interest and explore *how* the products were used. The front collection was thus more exploratory than exploitative, as the focus was more on learning and exploring what could possibly be than on profitability here and now.

In addition to the standard product range and the front product range, many products and projects were developed with no intention of either mass production or sale. This other product development stream consisted of "sponsorship products," products made for a special

occasion or developed to try out ideas without the restraints of profitability or possibilities for mass production. These products were thus about learning and exploration and about challenging product conventions.

The company sponsored a number of events connected to the professional kitchen, such as chef championships. Sometimes, all the chefs had the same range of plates to choose from; other times each team had its own "design program" where décor and forms were developed especially for the team. The degree of involvement and instructions the designers and product developers experienced from the chefs could vary considerably. The learning connected to such projects and tasks mainly involved developing products for more spectacular food presentation. In these projects, the sales potential for products in the "ordinary" professional market was not relevant. This also implied that these products were typically not produced in ordinary mass production but made by hand. Central in this learning process was the collaboration in chefs' cutting-edge food presentation, where the norms for what the products should be were challenged. Through these collaborations, the product developers and designers also developed their relationships with the chefs and gained more insight into how they worked.

To secure time and focus on exploration without having any specific purpose other than trying out ideas, the product developers and designers had as a task in their job description working with "Unika projects". Unika projects can be projects that participants choose alone or projects they work on with colleagues. In contrast to sponsorship projects or special design projects, Unika projects were not developed for a specific purpose, other than creating room to try out own ideas without thinking of what others would have, what could be possible to sell, or what it would be possible to mass produce. By formalizing this playful work, it took on legitimacy and priority–although not first priority–in a work environment with time constraints.

Table 4.1 shows the four main groups of product development, their purpose, whether the resulting products are intended for mass

production, and whether they are intended for sale. The two first groups, the standard product range and the front products, can be labeled as the first product stream, products intended both for mass production and for sale. The second product stream consists of the products developed for special occasions and the Unika products. These products are not intended for mass production or sale.

Table 4.1: NPD Strategy

NPD Strategy			
Product group	**Focus on**	**Production method**	**For sale/not for sale**
Standard product range	Profitability and function	Mass production	For sale
Front product range	Design and exploration of market acceptance	Mass production	For sale
Sponsorship products/ products made for special occasions	Making something for special occasions	Made by hand	Not for sale
Unika project	Free exploration	Made by hand	Not for sale

The most central aspect of the NPD strategy – and the company strategy, for that matter – is the focus on developing good product solutions, rather than focusing on specific products. This means that the NPD work is not confined to developing new and improving existing products, but also includes reconsidering existing products to create new and better product solutions. Such product solutions will typically serve a specific purpose or market demand and can consist of both existing products and newly developed products. The products can be picked from both the

standard product range and the front product range. As I will describe in Chapters 5, 6, and 7, from time to time, products developed *not for sale* have also been reconsidered and taken into product solutions developed *for sale*. The NPD strategy is useful for understanding the purpose and expectations for the various products, which relates to what kind of product is being developed.

4.3 CHARACTERISTICS OF THE COMPANY – ORGANIZATION AND TASKS

In this sub-chapter I describe how the company is organized, what the work tasks in the company are, and what characterizes the NPD work. I start by commenting on the management structure before going into the physical placement of the various departments.

4.3.1 A FLAT MANAGEMENT STRUCTURE

The management structure in the company is relatively simple. There is one top manager, and he manages together with his management group. The management group consists of the production manager, the NPD manager, the sales manager, and the financial manager.[22] Production has various team and area managers, some with bigger areas of responsibility than others. The highest level of management is the board of directors, consisting of the owners and various members, including employees.

The management style practiced in the company is to my experience "at the same level" as the rest of the employees. Historically, the company had hierarchically organized positions, but things have changed over the years. A former top manager and changes in the foreman system might have been central to this change. The former top manager took significant interest in both production and design and also interacted frequently with employees. The next top manager in line has followed this path. Such a management style does not just open up to the influence of others,

22 Earlier, the marketing manager was also part of this management group, but for a while the marketing manager was a "manager for hire" and thus not part of the management group.

it also demands the co-management and self-management of others. I will go more into how this played a part in NPD processes in Chapter 8.

The management group has significant influence on the management of the company, not just as a group, but also because most of the participants also take part in many projects. Power in this company appears less connected to position and more connected to the influence one can have through taking part in important transactions. Two aspects are central to this influence; one is the arenas to which one has access, such as participating in projects, the NPD council, and meetings. The other is the extent to which one knows and handles the social play in which meaning develops. Handling the play involves knowing what counts and what does not and understanding what others would expect and accept from oneself in the specific situation. It means being a competent participant.

4.3.2 *ALL FUNCTIONS AND DEPARTMENTS LOCATED AT THE SAME SITE*

The various departments in the company can be divided into two groups: production and administration.

Production

A simplified description is that all tasks and sub-departments connected to ordinary production are part of "production." Production of forms involves all the tasks, including making forms for use in production, mixing clay, making the form products, firing, glazing, and firing again before packaging, storing, and shipping. The production process has several quality checkpoints.

Production of décor entails preparing décor layouts from the designers for printing, preparing the prints, decorating the products, and firing the products. Hand-painting and direct printing are used in addition to "picture printing."

The maintenance department assists production with machine trouble, ordinary maintenance of tools, and to some extent development of special solutions and tools that others in production request.

Administration

All departments and work groups that are not part of production are part of administration. This includes marketing and sales, NPD, production management, the laboratory and quality control, health, safety, and environment (HSE) work, the factory outlet, office administration, financial manager, and top manager.

This overview of the various tasks and departments is consistent with the company's labeling, but it does not necessarily provide the correct image of who interacts with whom. Thus, some comments here are necessary.

First, production management is in one way part of production. However, production management is also part of administration in that its offices are placed there. Additionally, much of the interaction people in production management have with others is with others in administration, connected to coordination of work and as part of the various projects, councils, and departments. People from production also to some extent take part in meetings and workshops for "administration."

The casting workshop is part of the NPD department, but it is situated in the production area. The casting workshop produces the forms for one of the production methods. This involves interaction among the product developers, the form maker, and others from production. Additionally, people from the mechanical workshop may ask the form maker for help in making silicon parts, as the form maker has this competence.

The designers working with marketing layout have considerable contact with the marketing manager, the factory outlet manager, and people from the sales department. The designers developing decors, customized or standard, have significant contact with people in the sales department, the color lab, and the printing workshop. More generally, people in the NPD department have contact with people in the various parts of

production, both when new products are tested in ordinary production and in relation to production difficulties related to "old" products.

The top manager, sales manager, NPD manager, production manager, and marketing manager all take part in numerous projects and councils, usually with other participants. An interesting observation is that the financial manager is to a very limited extent part of these projects and councils, despite the economic aspects of the discussions in the meetings. Economic issues are raised by others participating in the projects and councils. This appears to be an expression that the projects and councils themselves bear the responsibility for their resource allocation.

Another interesting observation is that, despite the number of employees, there is no personnel manager. The reasoning behind this is that the manager responsible for the department is the best for employing personnel for his/her department and also for working out solutions to problems that occur. This also results in tasks that a personnel department often would take care of, such as competence development, social events, and informational meetings, being organized by the persons closest to the task, often across departments.

4.3.3 TWO CENTRAL PRODUCTION METHODS

Two production methods/technologies are mentioned in this thesis. These are isostat pressure and pressure casting, both of which are connected to the production of forms. Isostat pressure forms products out of dry clay powder. This machinery can only produce round products, but this production method demands less hand-crafting and is thus fairly cost-efficient in terms of cost per produced item. Each product requires specific tools/forms. These tools/forms were developed and manufactured by a supplier based on specifications from the product developers. The forms were costly and sometimes had to be developed in several versions before coming to a version that functioned well. Thus, the isostat pressure method meant that products had to be produced in certain volumes to be profitable. However, after having paid off the tools, the costs per item were lower than with pressure casting.

Pressure casting means the use of fluid clay that is pressed into forms before much of the water is pressed out of the clay. This production method can produce forms that are "not round," but also needs more hand-crafting because the products must be sponged by hand afterward.

Production methods are not a theme in this thesis. However, in some discussions, these production methods are mentioned and for the sake of understanding I have described these two production methods and what characterizes them. In the next part I describe what characterizes the production work in terms of standardization.

4.3.4 TACIT KNOWLEDGE IN STRUCTURED PRODUCTION

Most of the production tasks are standardized in that there are routines and written specifications for how operations should be executed. However, during the work processes, production employees must consider a multitude of issues. The production of new products and frequent readjustments of the machinery for different products are two of the main reasons there is also a need to develop an understanding of what happens in ordinary production and to act on that understanding. This understanding of how to act in various emerging situations can be understood as tacit knowledge connected to the work tasks. Production employees develop shared understandings of how to handle various situations, and these understandings can be seen based more on gut feelings than explicit procedures. In other words, the production employees understand almost intuitively how to respond to various events, but cannot necessarily explicitly express why this is the right response. An example of this involves a new product tried out in production. The new form was installed in the machine, and when the operator was to program the machine, he asked the team leader for the data sheet for the form: *"There is no data sheet yet, as the form is new. You can use the sheet for the ... form."* The team leader found a sheet for a form that had many of the same properties as the new form. However, the team leader did not say why this other data sheet could be used. To understand why the other data sheet could be used, and how to use it, the machine operator had to have insight into how the new product and the

existing product were similar, and thus what adjustments the machine operator had to make in relation to the new product.

Another form of developing meaning that cannot be standardized involves issues that occur during production where conferring with colleagues about what to do is necessary. Who to include in the discussion also depends on what the initial production employee assesses the situation to be and who would and should be taken into the assessment. The production employees thus need to assess whether there is a problem or something others should be made aware of in the ongoing work. To do this, they also need insight and experience in what others need to know to do their work tasks well.

Although much of the production is standardized, many instances and situations can be both critical and uncertain. For example, firing new products can be critical. During the development phase, assessments are made of the best way to fire the product, but the real test is in ordinary production. This means that not only can the firing itself be critical, but it is also vital that the employees working with the firing involve the product developers and other production employees in any problems that occur.

Although the organizing of work tasks as such is not a central focus in this thesis, the fact that the management structure is relatively flat, and that the various work functions and departments are placed in close proximity to one another, can be relevant for understanding the possibilities for meaning-making transactions I will focus on this in Chapters 5, 6, 7, and 8. This also goes for the tacit knowledge connected to both production and across departments and work tasks. Having internalized this tacit knowledge enables the participants to take the initiative for learning across departments and tasks.

4.4 NPD WORK IN THE COMPANY

In this part, I will describe the NPD work in the company, what it entailed, who took part in it, and how it was organized. The aim is to

provide an overview of the NPD work before I go into how meaning-making in this work developed. Thus, this description can function as both a framework and a reference for the empirical chapters that follow.

4.4.1 *THE PRODUCT COUNCIL AS FORMAL DECISION MAKER IN NPD PROCESSES*

The product council has formal responsibility for making decisions regarding what products to launch and for developing the total product range in accordance with company strategy. The mandate can be specified into two main tasks. First, the council makes decisions in relation to suggestions and models from the designers and product developers in the NPD department. Council members also suggest new products, for example, after identifying "holes" in the product range. A fixed annual amount is allocated to investments in new product development, and it is the product council that has the mandate and responsibility for prioritizing these resources as it finds best. The way this has normally been done is on a product-by-product basis in relation to customer needs and what the council chooses to focus on for specific launchings. Decisions regarding products are not made at the same time, as products usually will be in different places in the pipeline. Through discussions in the council, the costs connected to getting a new product into mass production are roughly assessed based on experience with similar products and the kind of challenges one can expect with the specific product. From time to time, a fuller account of how the spending of resources is divided is provided. As resources are limited, it functions as a reminder of what the council has decided and what needs to be prioritized.

The second main task of the product council is to determine what products should be taken out of the product range. Keeping the product range at an acceptable level in terms of number of products is imperative for efficient production and an acceptable level of stock. The assessment of what to take out and what to keep is not always easy.

The participants in the product council are all department managers exempt the financial manager, and also some of the designers and product-developers, the general manager and some participants from sales.

In addition to the product council there is also a market council with some of the same participants involved. Additionally also the marketing employees are included. The marketing council has responsibility for the decisions relating to development of marketing material and marketing events.

4.4.2 THE WORK TASKS OF THE NPD DEPARTMENT

The formal role of the NPD department is to supply the product council with the "material" (i.e., sketches, models, prototypes) it needs to make sense of what to pursue in the NPD processes. This means that all the physical development and interpretation of ideas, requests, and wishes are visually developed by the people in this department. Although the product council makes the formal decisions regarding NPD work, much of the consideration and meaning-making takes place informally among NPD employees, between NPD employees and others in the company, or with others "outside" the company. The main task in the NPD department is to develop new products that can be mass produced. New product development in the company can be divided into two types: development of forms and development of decors.

Developing forms

Products without décor are called form products in the NPD work, as it is *the form* that is developed. Developing form products typically involves developing sketches and drawings that are taken further into product models.

Developing new form products involves such tasks as identifying the need for a product that has not yet been developed. This again implies the work of making sense of what potential customers actually want in a product, how they would use it, and what they would pay for it. Another

aspect to consider is how the new product will influence the demand for other form products in the product range. Technical and practical aspects of the product in production also need to be sorted out. This means designing the product so that it can be mass produced at an acceptable cost; the production of the specific product is also adjusted to accommodate the rest of the production.

Over time, the original design can develop difficulties in relation to deformation or the customers can experience faults or difficulties that were not recognized in development. This can lead to a new prototype and/or a new form/tool being developed.

Development of decors

Development of decors involves creating decors for the form products. There are two categories of product development with regard to decors: development of standard decors and development of customized decors.

Standard decors are developed for certain products and are free for anyone to buy. This means they are marketed through product catalogues as standard décor products. Standard decors range from various porcelain sets for children to mocha cups. The expressions and styles also vary, as they are meant to serve differing purposes and markets.

Customized decors are developed for one customer, usually for one purpose. Customers can have as few as 98 items of one decor especially made for them, making customized designs fairly accessible. The decor is developed in accordance with the task given by the customer, which can range from applying a company logo to a mug to more comprehensive projects of developing decor for all the tableware in a restaurant. In such instances, certain colors or elements are often incorporated into the decor, although in some projects the designers themselves are left to interpret the concept without many guidelines.

The difference between creating customized decor and standardized decor is that customized decor has a specific customer that will accept or reject the decor and be more or less involved in the process. Standardized

decors mean that the company must appeal to customers about whom it may have only a vague notion. The designers may have an idea of the purpose or area of use for which they develop the decor, but no customer has directly asked for the product, and this makes the process of obtaining realistic feedback challenging. The participants working with form are usually called product developers or designers, while those working with decors are called designers.

Side tasks

Side tasks are development tasks not directed toward mass production or sale. Hence, these products that I here categorize as side tasks are not products that directly aggregate income for the company. However, the learning that is acquired through these side tasks is vital for and influential in the product development for mass production. Side tasks can take various forms, from the more general creation and assembling of ideas and sources of inspiration without a specific project or product in mind to the very specific tasks of making a specific product for a specific occasion. General inspiration and material were sourced during inspirational journeys through design magazines, exhibitions, and the like and were shared with the other participants on specific occasions. The material had to be categorized to ease the task of sourcing it whenever there was use for it. The designers did this by archiving the material on their Macs in something they referred to as The Bank.

4.4.3 COMPETENCE DEVELOPMENT IN NPD WORK

The NPD work was characterized by cross-disciplinary teams where the participants needed insight and competence in more or less all the various aspects of the work. This also enabled them to suggest solutions and express opinions about the work outside their own core tasks.

All newly employed "administration" employees had to go through an introductory program called the "the company school." Part of the training was taking part in specific tasks in production and various work groups in administration. The idea behind this "rotation" and training in tasks outside one's forthcoming ordinary tasks was to better understand

the overall picture by gaining insight into in the tasks of others. Part of this company school was also learning the company's history and its current strategies.

However, the main way to become a competent participant in the NPD work was to take an active part in cross-disciplinary transactions, formal as well as informal.

I have now described how the NPD work was organized in the company, the main tasks of the NPD department, and how participants in the NPD work were socialized and trained into the NPD work. In the next part, I describe the identity and culture that characterized the participants and their work environment, and that newcomers were socialized into.

4.5 IDENTITY EXPRESSED THROUGH UTTERANCES AND ACTS

Looking back at what I learned about who the participants understood themselves and the company to be, I see that in my initial contact with the company, some of its central characteristics were expressed. The encouraging, competent, and straightforward way my first telephone call was received and taken further[23] in many ways represents quite typical behavior for the participants in the NPD work; they took the initiative, made decisions, and found practical solutions to upcoming problems.

Below, I describe the most central characteristics of the company identity that the participants expressed. This is central to understanding how leadership is conducted through meaning-making because the understanding of identity in the company also says something about the expectations that participants have of their work and to one another in this work. Through the social plays where meaning develops, the participants can both enable and constrain one another by their acts. However, their acts are – if not directed – at least guided by their expectations. Thus, with some idea of what characterized the understanding of culture and identity in the company, it might become

23 A fuller description of this telephone call is given in sub-chapter 3.3.3.

easier to understand why the participants acted as they did and why I experienced what I experienced in the fieldwork.

4.5.1 EXPRESSED NORMS IN THE COMPANY

Worldviews that have proven both useful and meaningful for people over time can develop to become underlying assumptions about reality (Schein, 1985). Underlying assumptions are seldom verbally expressed, as they are usually seen as given. They can be observed indirectly, though, by observing the norms and priorities in the company. The underlying assumptions can be understood as the logic behind the norms and priorities, making them justifiable. I will now describe the central norms that I experienced as expressed by participants in the company and provide a description of the underlying assumptions that appear to justify or explain these norms. I have used quotations from the participants to illustrate what I have come to see as typical traits of the company culture.

4.5.1.1 "The company outlet needs to be where the production and the history are."

This comment came as a spontaneous response to a newcomer suggesting that the company outlet should be placed in the town centre rather than at the company site. Why this spontaneous protest to what appeared to be a reasonable suggestion? My interpretation of this response was that location of the company outlet was not just guided by proximity to potential customers. The location was in itself an underlining of two important aspects of the company and the products, namely production and company history.

Many acts in the company imply norms for showing both regard for and insight into the history and production in the company. The underlying assumption could be that the company history and the production are central to "who we are" and having insight into and knowledge of this is part of being a competent participant. Having thorough insight into the production processes also enables particular participants to understand

the processes more broadly than just their own restricted area of tasks and to understand what is needed on an overall scale to realize the tasks.

4.5.1.2 "We do as we want to around here."

By taking part in many cross-disciplinary teams and tasks, the participants have significant insight into the work across departments and disciplines. Simultaneously, such a way of working also means that there often will be both crossing interests and crossing priorities and tasks. The quotation, *"It is not just your right, it´s your obligation to speak up when you think things are not right,"* implies a strong norm that might be expressed as *"everyone has a right to their own opinion, and to act upon what they asses to be best."* However, what is the underlying assumption of such a norm? Having witnessed many situations where people have exercised leadership in prioritizing tasks and making decisions, the underlying assumption seems to be that the one closest to the situation is also the best to decide what to do about it.

4.5.1.3 "We´re all equal here."

One of the norms I have seen people in the company react almost instinctively to when it is broken is the norm that one should not discriminate between production employees and "administration" employees. The underlying assumption appears to be that everyone is at the same level; they just perform different tasks. An example expressing this demand for equality is the following advice a former top manager received from one of the product developers as he started in his new job: *"The first thing you need to do is to learn the first names of everyone working here by heart, then the rest will sort itself out."* I interpret this utterance as an expression of the need to be at the same level as one´s employees and to demonstrate this by using first names when transacting with employees. This expressed understanding of equality also influences the ability to take initiative and challenge or question one another´s instructions if they appear to be unsuited for the situation. We can ask why this norm, as this probably was not the case a few decades ago? One theory is that in being flexible and able to develop and produce products

where one needs to learn along the way, there must be understanding, cooperation, and learning relationships among production employees, development employees, and others involved in the processes. Differences in status and identity might inhibit these relationships, creating more distance between the participants and more difficulties in transacting on equal terms. Short physical distances between production and administration also lead to people transacting across departments and disciplines.

4.5.1.4 "We´re outside the clusters, so we have to find our own way."

The company is located in a region that some years ago had a small, but flourishing fayance industry due to natural access to clay. Now, these traditional industries are long gone, and the company is thus not part of a cluster, as we find, for example, in Stoke, England. This understanding of being "outside" was mentioned from time to time. I came to learn that this "outside-ship" meant something more than just an ascertainment; it also appeared to be an argument for choosing solutions outside industry norms and solutions. Thus, although being outside the cluster could lead to difficulties in hiring qualified work applicants and maintaining informal contact between companies, it also led to an inclination in the company for employees to find their own solutions for upcoming situations. This was sometimes expressed as the reason to find more pragmatic ways to sort out difficulties. At other times, it was also expressed with a sense of pride; they found their own way among stronger and mightier competitors.

4.5.1.5 "We all have a responsibility for making things work."

Looking at how tasks are organized and prioritized, one norm appears to dictate that there is a common responsibility to make things work. This means that although people exercise self-management, it must always be in relation to the overall tasks. Examples of this are situations where someone needed help in getting, for example, an important delivery

ready for shipping. In one of these situations, two of the designers rescheduled their own tasks to help out with packing the products to ship. These "crisis" situations were even talked about as something positive; the way the employees handled them confirmed that they helped one another to get things done. Also, in situations where someone had misunderstood or forgotten something, others were expected to rearrange their own tasks to resolve the situation. Rather than finding scapegoats, people adjusted their own work tasks so that they could take shared responsibility for upcoming tasks. The underlying assumption of such norms appears to be that shared interests go before individual priorities.

4.5.1.6 "You don´t brag about your own performance."

A norm I have seen exercised especially in relation to presentations of designs and models in NPD processes is that one doesn´t brag about one's own performance. Such a norm could seem strange in a company that takes much pride in what it does, and from time to time this applies to design awards. Maybe more is understood by also acknowledging how people respond to the models, sketches, and the like. For example, they comment about form and how the product could be produced, but give little attention to whether they like the product or whether the designer has done a good job. The underlying assumption seems to be that assessing a product should never involve assessing the work of a single product developer or designer.

4.5.1.7 "There´s a lot of strips and tape around here."

This quotation is taken from a strategy workshop where one of the employees expressed what characterized the way they worked in the company. As I have come to understand this characterization, it expresses a way of working where improvisation is neither unusual nor seen as negative. The ones closest to the problem find pragmatic solutions to solve the problem there and then with the tools closest at hand, without involving others more than necessary in the problem solving. On the other hand, if it was necessary to discuss a problem for the sake of

informing or learning from it, others would be contacted. This "strips and tape expression" was also connected to the understanding and willingness to make things work. The participants thus appeared to have agency in relation to acting creatively in upcoming situations, taking the initiative, and finding ad hoc solutions without necessarily asking for approval from others.

4.5.1.8 "We need to get the details right."

In a company where people appeared to have freedom and influence over processes, and where there appeared to be significant flexibility in both how to reach solutions and how to organize work, I found one area about which there is no flexibility: the visual output. An example of this was a discussion where it became clear that some of the participants did not answer e-mails in the font defined in the design program. One of the comments in this discussion was that *"…we cannot complain about reduced sales if we are not even able to answer e-mails in the right font."* A professional attitude toward work is not about what means you use to reach your goals, but rather the result you achieve. An underlying assumption can be formulated as *"professionalism lies in the visual details."*

These norms, values, and underlying assumptions seem to constitute the expectations people have of each other for how to be professional in their work. If people are not able to internalize these norms and underlying assumptions, they might have trouble being taken seriously by their colleagues. This flexible culture with both freedom and possibilities for influence can appear as "kind." However, working in such a culture can be demanding on the individual, as the roles appear to be blurred and it may seem that anyone can have their say in anything. Having influence and being able to function well in such a culture demands both insight into and ability to adjust to the social plays that such a culture entails.

As underlying assumptions and norms are understood as responses to reality that have proven useful and meaningful over time, it is reason to

believe that the characteristics I have here described also have an impact on the ability to conduct NPD work.

4.6 SUMMARY: AN UNUSUAL COMPANY IN A TRADITIONAL INDUSTRY CHARACTERIZED BY GLOBAL CHANGES

In this chapter, I have described what characterizes the porcelain industry and how globalized competition has led to the need for automation and outsourcing of production from high-cost countries to low-cost countries. In this situation, the company has chosen a strategy differing from most of its competitors in the industry. Except for 5%, it has kept its production "at home." Also, although it has renewed its production tools and machinery, this renewal has not necessarily led to more automation. On the contrary, some of the newer products have demanded more hand-crafting than the more traditional products. Another strategic choice that separates the company from many of its competitors is its choice to focus on the professional kitchen alone.

There is little hierarchy in the company, and as all departments and functions are located at the same site, the physical and relational distances between leaders and employees in the various departments are short. This also means that informal and direct feedback on how things work and the need to find new solutions is usually given through direct interaction. Although the production methods are standardized, challenging new products often demands room for trial and error in production.

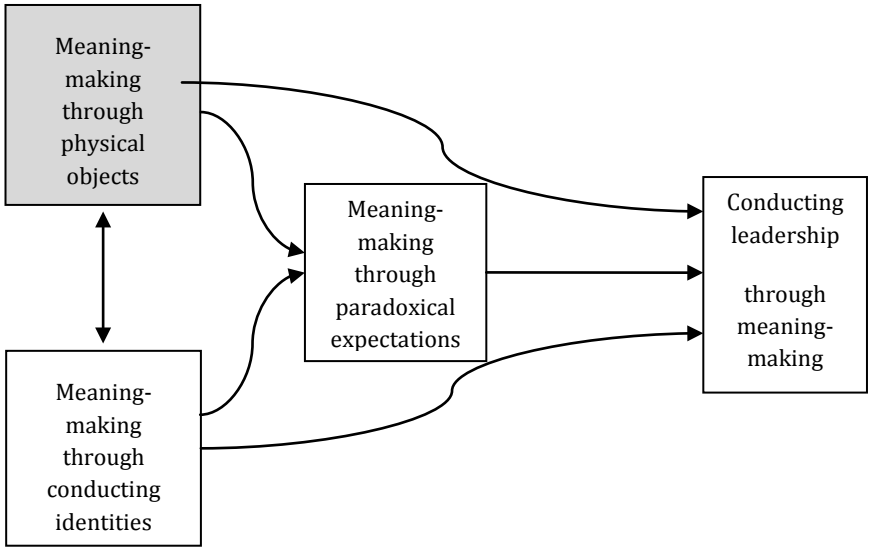
The NPD work is directed by a cross-disciplinary product council and the NPD manager. The NPD strategy divides between products intended for sale and products made for special occasions or trying out ideas and not intended for sale. The products for sale are also divided between the standard product range where functionality, compatibility, and cost are the focus and the front product range. The latter group is made up of products created with the intention of pushing the limits for what to

make for sale. Both forms and decors are developed, but the development work in relation to the two types differs considerably.

The company culture and the expressed understanding of identity are characterized by an understanding of shared responsibility, equality, tolerance of conflict, and raising and acting on one's own opinions. Nevertheless, this understanding is not seen as the right to uphold one's own performance at the cost of others. There also is tolerance for improvised solutions to upcoming challenges and for taking responsibility in such situations. Although there is much tolerance for improvisation in terms of solving upcoming process problems, the focus on getting the details right at the output is strong. Although equality is an expressed understanding within the company, it also represents an understanding of being different from competitors, "being outside any cluster."

This description of what characterizes the company in terms of context, the organizing of NPD work, and the company culture can be taken as background for better understanding the meaning-making in the NPD work on which I focus in the three next chapters.

5 PHYSICAL OBJECTS AS TOOLS FOR MEANING-MAKING IN NPD WORK



Physical objects, such as existing products (Cooper, 1993) and prototypes (Engwall & Westling, 2004), are understood as central for references, definitions, and tools for creating shared meaning in new product development (NPD) work. While Cooper (1993) talked about physical objects primarily as existing products functioning as references for assessments of new developments, Ewenstein and Whyte (2007a, 2009) offered a more nuanced understanding of the various ways physical objects can function in meaning-making as both communicative tools and learning tools.

In this chapter, I will focus on how physical objects can be used as tools for demonstrating solutions, communicating ideas, raising agendas, framing meaning and for learning. The first research question is addressed:

How do physical objects play a part in meaning-making in NPD work?

From a relational perspective, physical objects are interesting to look at for two reasons. The first is that they have both physical and social aspects to their meaning. The social aspects comprise our experiences with the physical objects and the interpretations we have made of these objects through transactions with others. While the physical properties of a physical object are exact and specific, the social meaning of the same physical properties can vary between individuals and groups of individuals. The same physical object can be understood as "exclusive" to one person, while for others it means "trouble." Take, for example, the development of a product series for the high-end market; market research indicated that a strong characteristic of exclusivity was that the products be thin. Nevertheless, for production, this meant trouble, as thinner products meant a higher breakage percentage.

The second interesting aspect of physical objects in NPD work is that they tend to "live their own lives" when realized. For product developers and companies developing new products, this means that despite their initial intentions with a new product, customers and users apply their own assumptions and interpretations to the products. Product meaning can also develop over time. Thus, the potential for learning from physical objects and how others respond to them does not stop with the launch date of new products.

Physical objects can be used for exploring product-meaning, but it can also contribute to understanding how to interpret market information, strategy, and for expressing individual expectations of what might be. I will show how physical objects can function as tools for conveying, expressing, and exploring meaning, both in a specific situation and over time. The findings are then discussed in relation to other research on the role of physical objects in meaning-making. The inquiries made around physical objects as tools for meaning-making will also have implications for what we understand as leadership acts, who conducts the leadership acts, and *how* enabling leadership can be conducted through physical objects. How physical objects play a part in leadership through meaning-

making will be addressed in Chapter 8. First, I describe an episode from the fieldwork that made me inquire about the role of the physical object in meaning-making and thus where I started to reconsider my understanding of the purpose product models have in NPD work.

5.1 DRAWING ATTENTION TO PHYSICAL OBJECTS AND MEANING-MAKING

One of the first activities I took part in as I started the fieldwork was following the product councils as well as other cross-departmental project meetings. These cross-departmental meetings were the formal means of organizing and conducting the NPD work in the company. Apart from understanding various abbreviations, trade terminology, and references to production methods, I had few problems following the discussions. The process of developing new products appeared to be like this: Participants in the product council offer ideas about what products they need, and product developers and designers suggest how to carry out the tasks through sketches and models that they present for the product council members to determine whether to take further or not. After some time and several rounds in the product council, products are ready for launch, rejected, or "put on the shelf." But *how* did the product developers and designers determine what to present? What considerations directed their understanding of what would be a suitable product or design?

To answer these questions and get a better understanding of how product developers determined what to make when starting out with a new product, I followed one of the product developers in the casting department when he created a casting model based on a drawing he had made. The idea had not yet been discussed in the product council. This situation illustrates both how the product developer expressed his understanding of working with a new product and the challenges of studying meaning-making where the interpretation demands insight into the form of tacit knowledge that it takes time to develop.

The situation was as follows: We stood by a workbench in the casting department, the product developer and me. He was filing on a block of casting where some pencil lines were drawn across the block. From time to time, he stopped filing, grabbed the pencil, and again drew the lines that had been filed away. I asked him how he knew what to make, how he figured out what the product should be. He replied: *"You just have to make it. There is no use thinking and theorizing too much about it… You just need to take the product forward. People cannot relate to abstract ideas or sketches; they need to see the model... Here (in our company) we develop models very early."*

Was there something here that the product developer took for granted and found difficult to express clearly? This became a puzzle at the time: How did the product developer figure out what others would assess as a good product solution? It became clearer to me through the fieldwork that in many situations the task of the product developer was not to figure out the product alone and then make it. It was the opposite; the product developer made a physical object as a gesture for others to respond to. As he pointed out, "people" could not respond to abstract ideas or sketches; they needed to see the model. Perhaps it was easier for participants to respond to an object with tangible properties as form, weight, volume, and surface to express issues and expectations they had for the new product. The product model appeared to function as a communicative tool for expressing expectations, not just for what the product could be but also for what the project could be, what its purposes in the NPD process should be, and how these could relate to other tasks and projects.

The use of physical objects as tools for developing meaning through transactions became a central theme in the fieldwork. I will now provide a broader understanding of how physical objects functioned as tools for conveying, exploring, and exploiting meaning in NPD work and start with the various ways physical objects functioned as tools for both communication and learning.

5.2 COMMUNICATING AND LEARNING THROUGH PHYSICAL OBJECTS

Developing a shared understanding of something that does not yet exist can be challenging. That might be the reason why existing products are often used as tools of reference (Cooper, 1993). However, product models can also be used as tools for exploration, for evoking responses that can contribute to a more or less shared meaning of what could possibly be (Ewenstein & Whyte, 2007a, 2009). Exploring meaning through product models in the company was often intentional. However, product models could also be tools for learning, and this learning could take unexpected directions. Although the communicative and learning functions could overlap in practice, I will nevertheless address them separately as they represent different dynamics. Sections 5.2.1 through 5.2.3 focus on how physical objects functioned as communicative tools enabling the participants to express, explore, and exploit meaning development. Section 5.2.4 addresses how physical objects also can be tools for framing meaning.

5.2.1 PRODUCT MODELS COULD HAVE SEVERAL FUNCTIONS

NPD work in the company mainly involved developing product solutions that would be mass produced and sold to the professional market and, thus, provide profit for the company.[24] However, as part of the NPD strategy, the designers and product developers also participated in various "side projects" in cooperation with chefs and other actors in the market to explore the limits of what was possible to do and make. In these explorative projects, the products developed were not set into ordinary mass production or made available for sale. This also meant that the expectation for profitability and production limitations did not apply to these side projects as they did to ordinary NPD work. I will address how product models contributed to meaning-making in ordinary NPD work before commenting on how explorative side projects differed in relation to ordinary products.

24 As pointed out in sub-chapter 4.2.3.

5.2.1.1 Using product models in ordinary NPD work

In stage-gate models (Cooper, 1993), products are thoroughly defined and specified and even assessed in relation to market and profitability before more detailed sketches or product models are developed. Contrary to what stage-gate models suggest, product models in the company were often made long before much discussion or a shared understanding of what to make was reached. One reason for this could be that the presentation and discussion of a product model could have differing purposes. One could be to explore what meaning a product could have; another could be to demonstrate what it was possible to produce with a certain production method. However, other purposes could be to develop an understanding of the characteristics the products of a new project should have and to use existing products to determine the "holes" in a product area. Three examples substantiate this argument.

A quite typical situation of how a product model was presented to the product council can be illustrated with the following comment from the product developer: *"This is an idea I wanted to try out. I thought–maybe for the bistro market. So, what do you think?"* The other participants commented, inspected the model, and asked various questions about functional properties and production issues. No decisions appeared to be made and little enthusiasm was expressed. Actually, the expression of feelings and personal comments were almost absent. Also, the product developer refrained from expressing his feelings and assessments of the model. In this situation, the purpose of the model presentation appeared to be to give visual expression to a design idea the product developer had wanted to try out. Thus, it is an example of a product that did not have a clear direction or mission in a broader project and did not address a specific function that was requested. After the presentation of the product in the product council, the product was developed further based on the comments. Later, this product became the "mother product" of a whole product series that was developed in relation to the tray project.[25] Product ideas materialized in physical product models could be around for a considerable time and then later be taken into connections and

25 See sub-chapter 5.2.3, The tray project

ideas different than initially intended. Product models could be used as a reference for a specific function or expression or included in new product solutions. Thus, the product developer provided the group with product ideas whose meaning the participants involved in the work would explore in various connections and situations. This also meant that the product developer did not have control over how the product idea would be taken further, although he could influence the further development through his participation in conversations around it.

A less typical example of how a product model was presented to the product council is the following situation where the product developer's task was to *"make something for the banquet project."* The product developer presented the product model with the comment, *"I have been thinking about what we can produce to what costs and come up with some suggestions…"*; he then placed a model on the table. He continued: *"This is some of the most simplified and inexpensive we can make by using the isostat pressure method*[26]*. The investments will be approximately x in tools, x in design, x in various costs, making up a total of x. With a production cost of x and a sale of x items, we will have a margin of x. So, in order to defend this investment in one year, we need to sell x the first year."*

In contrast to the previous example, this product model was thoroughly defined in terms of cost, profitability potential, and production method. In addition, although the following discussion revolved around the reliability of the calculations and alternative calculations, the participants did not respond to this as a finished product they should decide to launch or not. From the following discussion about the product model and through experiences from other product councils, I came to understand that the purpose of making and presenting this model was to provide material for discussing what the banquet project should and could be about. The banquet market is a price-sensitive market with high product volumes and strong demand for functionality in serving, storage, and handling between kitchen and serving situation. The product developer had apparently made the product model to demonstrate what it was

26 See sub-chapter 4.3.3. for further explanation

possible to make by using specific production machinery. If it was possible to produce a product this way, it usually meant higher tool investments but lower production costs per item. The discussion around this product was not about whether the product should be launched, but more about expressing what expectations the various participants had for the project. The model was thus *the tool for mediating a discussion about what the project should be about*, not first and foremost a discussion of the product itself.

Just as new product models could be actively used to explore what a project could be, existing products could also be used for this purpose. This was the case in a new project called cups and mugs. In the first project meeting, the participants suggested different understandings of what the purpose of the project should be and how they could start determining what they should do. After many discussions, one of the product developers suggested that they place all cups and mugs on a big table and try to create some system in them. This way they might see where the "holes" in the product range appeared to be. As they moved the products around on the table, they discussed the various placements. Through this "exercise," the participants expressed many of their anticipations and opinions about the various products and their functions. What became clear was that the participants interpreted many of the products differently. Here, the participants got to express how they interpreted the products in relation to one another, to question and challenge each other´s interpretations, and to explain to one another. They could also visually point out where the gaps in the product range appeared to be. It was the positioning of the existing products in relation to one another that functioned as a tool for expressing interpretations, opinions, and connections between the products and for discussing what the purpose of the project should be.

The three examples of how physical objects were used to explore what products and projects could be are typical of the beginning of projects. However, physical objects could also be used further into a project to unify meaning and direction in projects if it had become difficult to reach

a shared understanding. One example of this was a project initially called the canteen/institution project.

The delineation of this project was quite unclear since the canteen/institution market can be anything from prison and hospital canteens to management canteens in wealthy corporations. Could these markets have something in common, or were they so different that it was pointless to address them through the same project? This discussion often occurred in project meetings. After considerable time, the participants came to state that what the serving situations in this project had in common was that the food was served on trays. The project was renamed the tray project and then addressed any serving situation that involved tray serving. By shifting focus from imagining the various canteens that were intended as customers, the focus went to developing product solutions that could fit trays. In short, customized trays were designed by the designers and produced by a local manufacturer for use in the presentation of the product solutions. The trays dissolved the foregoing issues about price-sensitive product solutions or high-end product solutions because the trays moved the focus to serving situations where trays were used, rather than canteens and institutions as such.

Through these examples, I have demonstrated how product models were used in various ways to express, develop, and mediate shared meaning. Sometimes, product models were to express an idea or to explore what a project should be about. Other times, they could be used to provide a visual representation of the function and purpose of a project. However, the way the product models were interpreted was not completely open and free, but rather guided by a more or less shared understanding of a good product, good functionality, and what a product needed to look like and be to give a specific impression. Several participants expressed that they had a saying in the company, namely, that *"... it takes two years to learn what a right Figgjo product is."* Despite this clear notion of a definition for a "right" company product, the participants had difficulty expressing its clear characteristics. One of the the participants expressed this as *"…we know what it is when we see it."*

Explorative products never meant for mass production or sale also were part of the meaning-making, but as the purpose of these products was radically different from products for sale, their role in the meaning-making was more about challenging the limits of what it was possible to make. In the next part, I will describe how products – mass produced and intended for sale and made by hand and not intended for sale – were responded to with regard to market demand and market possibilities.

5.2.2 PHYSICAL OBJECTS EVOKING MARKET RESPONSE

Any company involved in NPD work will be interested in how customers and product users interpret its new products. I will now address how developed products, both those for sale and those not for sale, could be responded to by outsiders and how such response was not directed by the same expectations as those of the internal NPD participants. The market response I address here is not in the form of sales figures or product complaints, but rather transactions with potential customers where the customers reinterpret existing products. I will provide two examples of how existing products were the basis for suggesting and expressing what could possibly be. In the first example, the product in question is a product launched as part of the front collection.[27] The product in the second example is a product made for a special occasion and never intended for sale.

5.2.2.1 Responding to a front product

Some of the product ideas discussed in the product council were initiated by product requests from customers who asked for a modified version of an existing product. Customers typically expressed that they liked the product, but it had too little volume, it should have lesser weight, or have the same design but with a bigger diameter. The participants in the product council were generally reluctant to make another version of a product just because someone asked for it. Nevertheless, the requests were taken seriously, but usually as a sign of a possible market request

27 See sub-chapter 4.2.3 for further information about front products.

that could be explored. The discussion in relation to one of these requests went as follows:

Meeting leader: - *This is a request from the Asian market. They want a new version of the Planet. They want the plate to have a diameter of 27 cm, with a surface as big as it is possible to eat off. It has to be lower than the existing plate. Tom has already made a sketch. We think that this plate is actually already covered in today´s product range. It looks like a crossing between … and ….*

Product developer 1: - *But we can adjust the design in order to give it a stronger resemblance.*

The product developer working on the task had also made four other suggestions and the sketches were placed on the table.

Meeting leader: - *If this is going to be a front product, it has to be more special. It would be a better idea to make a dinner plate inspired by the Planet.*

Product developer 1: - *It is important that we stand more freely when we are making a front product.*

Meeting leader: - *This could be something for the buffet project.*

The discussion here addressed several aspects: what the actual need or purpose of the new product could be, whether it was possible to make a product that resembled the existing product, whether this product need could be developed, and finally whether it would be consistent with the strategy for front products and how the company understood "proper product development." This normative aspect usually came up in discussions about how to follow up customer requests; would it be right to make such a product? Was it in line with how the company thought about and developed products? Such questions were often posed in these conversations.

In this example, the request makers could imagine a new product based on an existing product. The existing product functioned as a tool for

expressing what they would like the new product to be. For the participants in the NPD work, the request could be separated from the existing object, and this made it possible to explore whether other existing products already covered this request. There were also more strategic understandings of the product in question that made employees more reluctant to "add another product," as front products were expected to be launched in their own right. Connections were also drawn to other projects. The meaning discussed in relation to one product or project often led to meaning-making also in relation to other development processes. I will go more into this later in this chapter.

In this second example, I point at another way an existing product became the basis for imagining a new product, but in this situation it was not the physical properties of the product that were suggested for change, but rather the way the product was defined. In this example, the product in question was a product not intended for sale.

5.2.2.2 Responding to a product not for sale

The products developed in so-called side projects not for sale were also responded to by both potential customers and participants in the NPD work. The situation in question here occurred at a trade fair where several new products were launched, among them two small Whales. To better expose the small products, one of the marketers asked a product developer to make some up-sized versions of the small Whale that could be used as focus points in the trade fair stand, so the developer did. The response to the new product from some of the visitors to the trade fair stand was that they wanted to order the big version of the Whale. In short, the bigger version was later launched as part of the front collection. One of the participants commented that *"[this] product would probably never have been developed like this if the intention had been to mass produce and sell it."* The reason for this was probably that the product was almost impossible to mass produce. The small, original versions were technically hard to make, and the up-sized version had the same difficulties only to a more extreme degree. Such extreme products stretched and challenged the limits of what was seen as possible to make

in mass production. People in production often had to solve these challenges and thus these challenging products also became tools for learning in production. In addition, although these extreme products were seldom sold in large numbers, they functioned as a visible representation of what it was possible to make. They also challenged the creativity of the customers regarding how to present and serve food in professional serving situations.

Within the NPD work in the company, these products developed not for sale were part of the meaning-making across products, projects, and processes. Although these products were in practice developed in transactions between the request maker and the product developer/designer, they were nevertheless presented to the rest of the product council. Thus, although the participants in the product council seldom made decisions about products not for sale, they were kept informed about them and the product models and finished products were shown to the product council. In the conversations around what a product could be or what a project could be about, these special products were often used as references for the ultimate aim. Hence, special products developed not for sale provided a broad stage for ideas expressed through physical objects.

It was not unusual in the company to bring product models to potential stakeholders or forthcoming users of the products. Examples of this could be asking the request makers of a specific product to comment on the model. It could also be asking a chef in a restaurant to test plates and provide feedback on how he used them. Product models were routinely taken on visits to customers, sales agents, and others. One of the salespersons commented that since she had joined the company, her hand luggage had always been overweight (with product models). These acts of bringing product models and products made for other purposes than ordinary sale to customers also expresses the relaxed attitude toward "protecting" the company's product ideas. The need for responses to product ideas was likely more valuable to the work than the fear of being copied. As the products not for sale were usually more extreme and ambiguous in their expression, they functioned well to spur discussions

about what could possibly be. However, as the ideas were materialized in physical objects, the participants could get a response not just to the product as a whole, but also to how others interpreted various physical aspects of the product.

The big Whale serves as an example of how a product made for a special purpose and never intended for sale was reconsidered after positive and unexpected responses from potential customers and thereafter set into ordinary production and sale. However, this also demanded reconsideration in production of what it was possible to produce and also what products the company actually wanted to produce. Maybe it was just because the product was so challenging – both to produce and to the understanding of what a "right product" could be – that it became interesting to try it out as a front product. If so, then the value of the specific product cannot be related only to its profitability in an isolated way, but also be assessed in relation to how it contributes to the development of competence, strategy and exploration, more generally. This leads to another way of thinking about profitability and the purposes for developing certain products.

In discussions in the product council, the arguments for developing a product could be several, ranging from as for example to make a light-weight version of a plate, or make a new product to "support" the sale of another product to make a product just for the sake of trying out how to produce products like that. Although these reasons often were expressed in the discussions, the products were seldom "classified" as explorative or exploitative. It was more like the expectations to what a new product could imply was aired in order to create ideas of what could possibly be in various directions.

The reinterpretation of developed products and product models in the company was not unusual. In the next part, how product meaning and project meaning developed over time is addressed. Both product models and developed products as physical objects were central for expressing and exploring this meaning.

5.2.3 *DEVELOPING "NEW PRODUCTS" THROUGH REINTERPRETATION*

In contrast to how Cooper´s (1993) normative stage-gate models are described as related to a specific process and with a clear beginning and end, it became almost meaningless to separate the various projects and processes from one another in the NPD work I followed. First, it was often difficult to point at where a development process started and where it ended. Second, the numerous processes that were developed more or less in parallel, and the previous processes and initiatives that came out of the current processes, were often closely intertwined, making it impossible to divide the processes from one another. Take, for example, the big whale; this was readily developed for the trade fair, but development of the product in terms of its meaning continued beyond production of the initial product. Also, it demanded reconsideration of meaning both in production and in understanding what a product "for sale" could be. Hence, such reinterpretations could lead to changes in meaning in relation to interpreting strategy, the understanding of what it would be possible to produce, and the understanding of what customers would be willing to buy.

One central aspect of the company's NPD strategy was the focus on product solutions rather than single products. This means that the NPD department was not just supposed to develop new products, but to develop new product combinations that better addressed the demands of potential customers. These product combinations could consist of both new and existing products. In some instances, existing products were reinterpreted, making their function in another combination different from their existing meaning. I will now give examples of such reinterpretations across projects and functions.

5.2.3.1 The sugar bowl: transforming meaning without transforming the physical object

The sugar bowl was part of the basic product range, and it was not a newly developed product. Its initial function and meaning was as a container for sugar, as part of a sugar and creamer set. As the sugar bowl–like all other products in the company–is intended for professional

kitchens, the product had various properties that made it practical for storage. One of these properties was that the sugar bowl was stackable. Although the area of use for sugar bowls must be understood as limited, the sugar bowl was well liked by many of the participants in the NPD processes.

In a project called the standard décor project, the designers were asked to develop both new product combinations and designs for these combinations. During the project, project group members presented their design ideas to the rest of the NPD department for input and comments from the others. The design layouts were spread out on the floor, and the products selected for the various combinations were placed with the designs. The product combinations were assessed and developed further. At one point, one of the participants took down a sugar bowl from the product shelf and placed it on one of the designs:

Participant 1: - *I really like this sugar bowl. We should try to get it in here somewhere. What about using it for dessert? For Crème Brulee?*

The sugar bowl was placed on one of the smaller plates. It fit perfectly.

Participant 2: - *What about decorating the lid?*

One of the participants placed the lid on top of a tea cup.
Participant 3: - *Look, it fits the cup. What about having Crème Brulee in the cups, or a surprise dessert?*

There was a lot of joking and laughter as the participants tried out possible and impossible combinations. For me as an observer, it appeared to be just “fun at work.” Later, however, the sugar bowl was included in one of the design solutions, but now not as a sugar bowl.

Several months later, the sugar bowl reappeared in the tray project. In the brochure for this project, the sugar bowl was part of several product combinations for several serving situations, such as room service, canteens, and food serving in meeting rooms ("Figgjo format," 2009). The

product in this brochure was not presented as a sugar bowl, but as an individual food container. On some occasions, the stackable function was also used in the serving situation, where one could have different types of food in the various bowls and stack them on the tray. This was both space-efficient and functional, which were two central characteristics of the product solutions for the tray project.

At one point in the tray project, a chef was invited to comment on the various product solutions. As he walked round, his enthusiasm revolved around the sugar bowls: *"These are fantastic. They open up for many opportunities."* The chef started to tell about his fascination with serving situations where many people are served within a small time and where the preparation space is very limited as, for example, on airplanes and boats. In such situations, the food must be organized in a very limited space, on a tray, and the food might need to be kept heated for some time.

Some weeks later, I joined some of the informants on a visit to the kitchen where the chef worked. Although we did not meet the chef, the sugar bowl was still a matter of conversation. The kitchen had, as a response to the chef´s visit to the company, brought in 100 sugar bowls to use in various serving situations. One of the participants asked if the chefs were happy about the products. *"Oh, yes. We use them when we serve many people at a time. We place two and two bowls stacked with a lid on top between every second place setting, and when it is ready for serving the waiters just remove the lids and place one bowl on each place setting. The bowls hold the heat for at least 15 minutes."* Later, the function of stacking food containers on top of one another was used in new product development.

Although the sugar bowl as a physical object did not change its physical properties, the meaning of the product changed drastically over time, from being a classic sugar bowl to becoming a stackable container for hot food. In its original function as a sugar bowl, this product did not have the potential for high sales volumes. It was one of the participants in the NPD project who wanted to include it in the standard décor project, as she thought it was a good product. As part of this project, it was not as a

container for hot food that the product was interesting, but as a way to present "surprises" in the form of desserts. It was first in the tray project that the sugar bowl was reinterpreted as a stackable hot food container. The physical properties of the sugar bowl (e.g., its stackability and lid) were initially made for other reasons (e.g., storage efficiency, protection of contents). The product was interpreted in novel ways both by participants in NPD work and by external respondents. Presenting the product in new connections, product solutions, and functions was thus not just a redefinition of the product, but also an offer for others to explore what the product possibly could be.

I have now given an example of how the meaning of a product was reinterpreted and redefined over time by including it in new product solutions and serving situations. The next example shows how a new project also could provide new direction for developing product solutions across product series, functions, the stndard product range and front products, as well as old and new products.

5.2.3.2 The tray project

Again, I return to the tray project. For the tray project, it became central to develop product solutions that could fit the various standard tray sizes and meet various serving demands. I will now describe product solutions that were part of the tray project to show how product meaning developed over time and across projects, product series, and initial intentions.

Some of the products for the project were newly developed; others were "old" products, such as the sugar bowl, that were reinterpreted into new product solutions. Examples of newly developed products for the tray project include small plates that were very space-efficient on small trays. The design idea and basis for these small plates was the "bistro plate"[28] from which these small plates emerged and that might have gotten more attention than the original plate. It might be first in relation to the tray project that the "bistro plate" got a clear direction and purpose, enhanced

28 The bistro-plate is earlier mentioned in sub-chapter 5.2.1.1.

by the products developed as spin-offs of the bistro plate. Without being made for this purpose initially, the bistro plate had a shape that made it space-efficient on trays. This realization led to the idea of extending the product into a product series based on the same design.

In this project, standard decors were also developed. The purpose of these standard decors was to let customers make their own product combinations and thus get a more customized expression in their product solutions. Various décor series were developed in one-color prints; all the various décor series were held to the same color scheme, making it easy to combine products across decor series. Another function of the colors was in relation to labeling food in self-serving situations. This could be done by using blue décor for fish, red for meat, and yellow for egg, for example. One of these décor series was based on a by-product from the décor production where color-control tags were produced with every sheet of décor prints. These control tags were necessary to control printing quality in production, but also were a resource that could be used after their control function was complete. The products that were included in this décor series were the newly developed "bistro plate series" and various products from existing product series. Among the chosen products was also a product series developed decades ago.

Developing various decors in the same color scheme did not just make it easier to combine various decors, but also made it possible to choose products from different product series and even different decades in customized product solutions.

The tray project is a good realization of the strategic choice to focus on developing innovative and well-functioning product solutions rather than new products and product series. Although this focus on product solutions had been apparent for a couple of years, this project appeared to be the first in which these product solutions really were combined through numerous products, both old and new, from various product series. Thus, various initial intentions were reinterpreted in a project where trays set the physical limitations for the product solutions. The trays as the spatial framework for what the solutions could be, and the

décor solutions making connections across product series and product generations, likely enabled easier comprehension of these product combinations. In the next example, I show not just how existing and new products were developed into new product solutions in a new project, but also how several products and projects were developed in parallel, across projects, and outside of projects.

5.2.3.3 Meaning-making across and through projects, products and processes

Development across, in parallel, and based on another new product development process is usually understood as the process of developing a product from idea to completed launch and evaluation (Cooper, 1993). This understanding is at least an over-simplification of reality. I have already pointed out how products as physical objects can be reinterpreted and taken into connections other than those originally intended. I will now describe how it was not just the specific product that could be reinterpreted. Many times, the products, their development, and their meaning were so interwoven that it was difficult to assess where one development process stopped and another began. The initiative for a specific project was often rooted in a theme or product need that became clear through working with other projects or ideas. Project ideas and ongoing projects were often informed and inspired by products materialized in physical objects that someone reinterpreted. A single product could develop into a product series as someone saw the need or opportunity to build further on the initial idea, but now possibly with another agenda.

As an illustration of the extent to which products, projects, and development processes were intertwined, I refer to the leader of the product council taking the participants through the products under development. She was about to present a product called “the brick” (as a working title). A previous version of this product had been developed for a chefs’ championship, but later redefined as a jubilee product for a town jubilee:

" … Then we have the jubilee product. We do not expect high sales figures on such a product. We have developed three special decors for the product. The brick (without the jubilee décor) in itself is not a bad product. But then again, jubilee products tend to live their own lives. But the brick is also a rectangular bowl – pretty nice – that could be used both for serving purposes and to eat directly from. Then we have the long rectangular form: This was initially developed for the ... national chef team. It was then made by hand. We have shown it for the … and for …. It might also be interesting as a "biscuit product" … We need to find some logic in this system–the jubilee brick in relation to the chef championship. We also look at the little rectangular tray that was developed for the tray project. This tray is very suitable for small products, the tapas products, the chef championship products, and the brick. They all share the same visual expression."

The meaning that had developed underway in these projects and led to the current situation can be explained as follows: An earlier version of the brick together with the long rectangular form was made by hand for a chefs' championship. In this project, the chefs were involved in the decisions about what to make. Later, a request came to make a jubilee product for a town jubilee, something that reflected the history of the town. Based on the town earlier being known for its brick production, the idea to make a brick came up. With some adjustments of the measurements, the rectangular bowl from the championship could be used. However, now it had to be mass produced. With its rectangular form, this "brick" functioned well on trays. The need for "biscuit products" was a longstanding request from the English market, but one for which the participants had difficulty finding a suitable answer. Another also vague request was the need for more small products in addition to tapas products. Maybe these requests could be incorporated in some product solutions?

Three aspects are worth noticing here. First, products could be reinterpreted several times and their physical properties could give direction to further development of events. Second, the participants in the NPD work did not relate to the products in an isolated way. Presenting one product often also meant interpreting and reinterpreting

the meaning of other products, projects, and processes. The presentation pointed both forward and backward. The presenter drew the lines as understood at the moment, indicated where they came from, and gave suggestions about what could possibly be taken further.

Third, to make sense of this presentation and to contribute to developing it further, the participants needed insight into not just the other projects and requests, but also the implications various connections could mean.

Realizing the impact of and the extent to which meaning developed across products and projects makes it easier to comprehend the impact a specific product has on the development of other products, project development, production, and the interpretation of strategy. On several occasions, the participants said that it was not possible to assess the success or failure of a product just by assessing its direct monetary contribution. One of the participants expressed this by saying that "some of the most important products here have never been launched." This indicates that the products and product models also had an important function as tools for exploring what could possibly be. Sometimes, this function appeared to be more important than the profitability aspects of the product itself.

This temporal aspect of the interweaving of ideas, products, and projects is central to how the products as physical objects can function as tools for meaning-making. For example, a new product that initially was understood as challenging to produce can, after solving the production challenges, represent a new way of thinking about production methods for just this kind of product. This means that it is not just the products as physical objects that are objects for reinterpretation, but also reality itself. In other words, in our transactions with physical objects, we develop experiences that can make us reinterpret reality as well as the objects as such. Various physical objects can thus be tools for exploring reality and creatively imagining what could possibly be. Another aspect of reinterpreting reality through physical objects is addressed in part 5.2.4; focusing on physical objects can direct and frame meaning in a more tangible way.

5.2.4 PRODUCTION TOOLS AND EXISTING OBJECTS FRAMING MEANING-MAKING

Production methods and existing objects are examples of physical objects that have specific implications for how the new product should be. They can also dictate the design and form.

We saw in one of the first examples in sub-chapter 5.2.1 how references to production tools, machinery, and production routines were used to enable participants to get some idea of the framework for product production. Take, for example, a specific production method; this often had some special features that could be advantageous and/or challenging. Emphasizing how the product could be produced also yielded information about what was important, as well as the limitations for design and production.

Other physical objects providing possibilities and limitations for developing new products were already existing equipment or products that can function with the new product. An example of this was a production and storage rack system that many professional kitchens worldwide use. This system led to standardizing the measures production equipment could and should have. Requests from customers indicated the desire for serving forms that could be used in food production and in serving situations without moving the food from one (production) object to another (serving) object. Storage rack systems illustrate physical objects that participants did not physically have at hand, but still were crucial to align with if the products were to function as intended. The participants thus had to imagine the challenges of using the products in the racks and the possible advantages of doing so. In discussions of what and how the new product should be, references to production methods and existing equipment can be informative and provide considerable information about what the products aim for. However, at the same time, participants must have a thorough understanding of the implications of these physical objects and, thus, also how this influences the possibilities for product solutions. In both examples, existing physical objects framed how the new products had to

be. In the first example, they framed how new products had to be produced. In the second, they framed how they had to be formed to fit the existing equipment in professional kitchens.

Another form of physical object that also contributed to meaning-making in NPD work, but that might at first sight appear to be of lesser interest, is a décor description sheet describing where to place standardized decors. This sheet was introduced as a consequence of newcomers in the décor department not having the tacit knowledge that the experienced decorators had of where to place various images on products. As the designers could not foresee who would receive a particular decorating task, they began to equip every décor order with description sheets. The sheets functioned to convey information about where to place specific décor on specific products without demanding any direct contact between decorators and designers.[29]

Three examples of how physical objects provided a framework for understanding prospective products have been given. In the first two examples, a production tool and a storage rack provided the framework for what the product solution could be. In the third example, the physical object, the décor description sheet, transferred necessary information from designers to decorators regarding how the décor should be placed and was more a tool for securing the quality of the decoration work than a framework for development.

The focus of sub-chapter 5.2 has been on how physical objects can be communicative tools for exploring and expressing what products could be and where this is done more or less intentionally. In the next part, I will focus on how physical objects, through unintended physical properties, also can lead the meaning-making in a different direction.

29 In the next chapter, I come back to this description sheet and how just the fact that this sheet did not demand any direct contact between participants also could create challenges that had to be overcome.

5.3 LEARNING FROM PHYSICAL OBJECTS

It was not just as a tool for communication that physical objects had an important function in meaning-making in NPD work. Through transactions with products, decors, and product models, the participants also learned from and had their attention drawn to unexpected or overlooked aspects of the product development or processes. This occurred often through discoveries in relation to setting products into production or when unexpected problems emerged with ongoing production. Yet another form of learning from the physical objects was determining how customers actually used the products in practice.

I will give an example of how the physical properties of a physical object can lead to a change in project focus. The project in mind was called the recycling project and its purpose was to explore whether it was possible to recycle clay spillage in production and use it for a recycled product collection. Much of the work in this project was lab work where one of the lab workers tested various clay mixes with differing measures of recycled clay and new clay to determine how the mixes would work in production. Some participants in the project group expressed a wish for a recycled "expression" on the products, while others apparently wanted recycled products that resembled the quality of ordinary products. At the end of one project meeting, it was suggested that some product models be made for the next meeting using the recycled mixes to see how the products turned out. Two surprising discoveries were made as the participants scrutinized the recycled product models. The first was that the surface of the products was surprisingly similar to that of existing products. The second was that the product walls were much thicker than ordinary. One participant asked whether this could be adjusted and the lab worker replied that it could be done by reducing the casting time. Reduced casting time could potentially be difficult in production, however, as the employees would not have sufficient time to sponge the products as they came out of the pressure casting machine. The recycling project stopped for a time, but another project emerged. This new project was to explore the possibilities for reducing casting times. This would possibly enhance the capacity of pressure casting – which at the time was

a bottleneck – but it meant that the work tasks in production would have to be reorganized.

What I want to draw attention to in this example is that the properties of the physical objects led not only to new discoveries, but also to new focuses and new conversations. This led to potentially new solutions to existing problems that no one had actually thought about before. This in a way marks the difference between physical objects as communicative objects and learning objects; with learning objects, one spontaneously starts inquiring by experiencing them.

The most typical way of learning from physical objects involved situations where the product did not behave as expected in production. In situations with unexpected problems or something occurring more often/seldom than expected, the experienced production workers often called for the product developers, designers, or quality controllers to look at the result. These transactions often took place when the person/s called for came to the production area where the production employee briefed the person/s on what had happened, providing possible hypotheses and solutions to the problem. It was not necessarily clear who the right people to involve would be, and sometimes several people joined these transactions. In one situation when I was in the printing department, one of the printing machines acted up and was stopped. Within a few minutes, several people from the maintenance department had arrived, as had other production people. As they tried to figure out the problem, some left for other tasks and others were called or came in on their own initiative. To me, it was clear that such situations were central to the development of learning and experience and where participants could choose to be involved by showing initiative in the situation.

Production problems generally disrupt both efficiency and the quality of the products and, thus, are avoided. This could also be experienced in the company, where people sometimes expressed that new, "experimenting" products took up too much production capacity while delivery requests for ordinary products piled up. In such discussions, people in the product

council usually emphasized that if the company was to develop and produce innovative products, there was bound to be trial and error in production, and at times this had to be prioritized. Sometimes, the product developers together with the production employees did not necessarily know how to solve the expected problems before things were tested in production. This came to expression through, for example, this quotation from one of the product developers presenting a new product*: "We don´t know yet just how to produce this, so we need to allow for some trial and error in production."* While production problems generally were seen as negative, there were also indications of developing and producing "difficult" products just for the sake of learning from them. An example of such an indication is the following response to a comment where one of the participants meant that the product in mind would be impossible to produce: *"Maybe just because of this we should produce it."* This goes to show that difficult products can have important functions, not just for extending the limits of what it is possible to do, but also because they can draw attention to unintended aspects of the development work.

These observations indicate that trials and errors in themselves can be useful for drawing attention to aspects that were overlooked. Learning from mistakes is not something new in the innovation literature. However, making something just because one expects there to be problems is unusual. This observation indicates that profitability assessments in the NPD work were not just in relation to the specific product, but had an overall focus on broad exploration to find possibilities for exploitation. This understanding might also explain why numerous product models were developed although they initially were not intended for sale and why product models often were developed very early in the process.

In summing up the main findings in relation to how physical objects contributed to meaning-making, two unexpected, but central characteristics with the NPD work in the company must be emphasized. The first was the understanding that the NPD work was not just cross disciplinary, it was also teamwork where participants were expected to take initiative outside their own tasks and disciplines. Thus, product

models were not the result of the process of developing an understanding of what the product could be. It was rather a tool for exploring what it could be, or what a project could be about.

The other central realization that also was unexpected was the extent to which the various NPD processes were interwoven. This interweaving was not just so that one product could inspire the development of another product. The processes were sometimes so intertwined that it was difficult to decide where the development of one product stopped and another started and how to assess where the product "belonged" because the products and projects often developed in parallel and the meaning-making developed across projects. This meant that the discussion around a product model could often be more a discussion concerning a new project or the NPD-strategy than about the product as such.

The flow of existing products, new product models, products developed for other purposes and intentions, and products never intended for sale represented a wide range of physical objects with specific physical properties for others to respond to. Nobody alone "owned" the meaning of the products, implying that it was up to the participants to draw connections between and reinterpret the physical objects into new connections.

The developed understanding of production methods could also be a tool for expressing and developing a shared understanding of, for example, how a product could be developed. Thus, the tacit understanding of various physical objects involved in the NPD work often provided a framework for understanding how things could be. Schemes could also involve physical objects that conveyed meaning beyond the specific task provider.

Participants also learned from transacting with the physical objects. One typical form of this was through inquiry around situations where the product did not behave as expected, for example, in production. Discoveries made by exploring faults and unexpected outcomes could lead to changes in focus and alternative discussions. Now, how can these

observations of the use of physical objects in NPD work be understood through a relational approach? This will be addressed in the next part.

5.4 DISCUSSION

These findings can be understood in light of a relational approach, mainly through the social act of gesture-response, and through an understanding of significant symbols (Mead, 1934). However, how do these findings and the relational interpretations of the findings align with other relevant research on the role of physical objects in meaning-making? This will be addressed in relation to tacit knowledge and communities of practice (Brown & Duguid, 1991, 2001; Kleinsmann & Valkenburg, 2008; Wenger & Snyder, 2000) and how physical objects can function in development work (Ewenstein & Whyte, 2007a, 2007b, 2009).

5.4.1 PHYSICAL OBJECTS AS GESTURES TO RESPOND TO

A major discovery in the fieldwork was that the product model or the already developed product was not to be understood only as the answer to meaning-making, but rather as a tool for exploring what meaning the object, project, or process could have. The product model or developed product could be understood as what Mead (1934) called a gesture for someone to respond to. It is through holding the product model with the response it evokes in others that the physical object takes on meaning in the group. Thus, the physical object in question can be understood as a visual representation in line with what Ewenstein and Whyte (2009) defined as an epistemic object. Epistemic objects are characterized by their incompleteness. They are a representation of what could possibly be, spurred by responding to a visual representation. There can be at least two aspects of understanding the product as a visual representation of what could possibly be. First, by presenting the product model as a gesture for someone to respond to, it is possible to develop meaning as to what the product itself possibly can be. Second, the physical object can also be a mediator for bringing up new conversations, for exploring what projects could be about, or for drawing attention to unintended

outcomes, for example, through discovering faults and weaknesses in the product model.

Developing an understanding of what the product could be by using the physical object as a gesture for someone to respond to provides an understanding of why product models often were developed very early in the development process. This understanding contradicts the rational stage-gate process (Cooper, 1993) where prototypes and product models are developed after the product has been thoroughly defined. The idea behind this is that prototypes and product models are usually costly to develop. The longer costs are postponed, the greater the chance of not spending on "wrong" products. Findings from the fieldwork indicate that the product models were often made just to explore what the product could be and to enable others to express these expectations.

A physical object as a gesture for someone to respond to, can also change meaning. This also shows that a product – without changing its physical properties – can evoke differing responses in differing connections and over time. Product meaning was thus not once and for all defined, but under more or less continuous reinterpretation. This again brings me back to the stage-gate models (Cooper, 1993), as they focus on how previous product successes and best practices are used as a basis for new product developments. However, if the meaning of products develops then previous product successes can change the expectations and understandings of product developers, competitors, and potential customers toward new products. In particular, when disruptive NPD ideas are launched, it changes the expectations as to what product solutions the customers prefer (Bohlmann, Spanjol, Qualls, & Rosa, 2012). However, it is reasonable to believe that also more incremental developments change meaning over time and products should not be treated as stable.

Physical objects were also gestures that evoked unexpected responses about what a project could be, how products could be produced, and how product models could draw attention to unintended weaknesses and faults. Hence, physical objects with certain properties demonstrated

something that participants had not imagined or anticipated. This could lead to inquiries from the participants when they needed to reconsider previous expectations of how things would turn out. As Elkjaer and Simpson (2006) argued, it is through inquiries that we have the possibility to free ourselves from our Me´s, our internalized expectations in the situation, and act creatively. Making the physical object before it is fully defined could be a way to enhance the possibility for inquiries, given models' often ambiguous appearance. Product models could also be understood as epistemic objects (Ewenstein & Whyte, 2007a, 2009), characterized by incompleteness. Extreme products, like products not developed for mass production or sale, might be the ones that more easily invite alternative interpretations. However, the findings in the fieldwork indicate that "traditional" products with a clear purpose and meaning can be reinterpreted and thereby lead to new developments.

Thus, the physical object itself can be of lesser importance in terms of direct profitability prospects. A successful product in this sense would be a physical object that led to discoveries or inquiries that altered the discussions or drew attention to aspects that could relatively easily be turned into profitable product solutions. In NPD work developed through so-called rational processes, the focus on profitability of the specific product can lead to "learning products" being avoided. Seen from a learning perspective, it is of value to have both a broad range of exploratory products to respond to and many product solutions to respond to. The significance and impact a product can have for the success of a company can thus be measured in at least two ways. The first is profitability. The second is the extent to which a product has fruitfully contributed to the exploratory work.

Although physical objects can be understood as tangible gestures that participants respond to without pre-developed expectations about what a product should be, there were also developed expectations for what a "right product" should look like. Such shared expectations can be called significant symbols.

5.4.2 THE PHYSICAL OBJECT AS A SIGNIFICANT SYMBOL

Significant symbols – as a gesture evoking the same response in oneself as in others – enable participants to communicate more or less efficiently guided by these significant symbols. Significant symbols are shared understandings of a task, a phenomenon, or the purpose of something. I will discuss how the development and understanding of significant symbols can guide the meaning-making in some situations and lead to reconsideration of the significant symbols in others. The first example shows how physical objects can mediate meaning; the second shows how physical objects can lead to inquiries that in turn lead to revisions of the significant symbol.

The exploration of physical objects can contribute to developing significant symbols in NPD work. In some situations, the product model might have its most important purpose as developing a shared understanding of what a project should and could be. The physical properties of the physical object could direct attention to specific aspects of what a project could be about. By transacting around physical objects that express or convey specific aspects, the participants can develop an understanding of what the project should be about and the criteria for products being part of the project. In this sense, physical objects can be mediators for developing the significant symbol of, for example, a banquet project. The physical object and its function in discussions around what a product could be was a significant symbol in the sense that participants had to have an internalized understanding of what the physical object was in the discussions – a gesture for them to respond to. In Chapter 6, I will discuss these aspects of meaning-making.

The NPD strategy with its various product groups can be understood as consisting of several significant symbols relating to whether the prospective product should be a standard product, a front product, or a product made for a special occasion. This means that if the product developer or any other participant suggested that the product could be a front product, the others knew what that typically implied. Significant symbols did not just enable the participants to grasp what the product

developer aimed for, but to adjust their response to their expectations of how the physical object then should be.

It was not just projects and product groups in the NPD strategy that could develop into significant objects. Physical objects like production tools such as machinery could also develop into significant symbols in the NPD work. This meant that, for example, suggesting that a prospective product could be produced using the isostat pressure method gave the participants a shared understanding not just of how the product should be produced, but also of how the product could be. The machinery as a physical object can here be understood as what Ewenstein and Whyte (2009) called a technical object, giving a framework for how the product as a physical object should be. However, isostat pressure as a significant symbol entails more than understanding the technical limitations and possibilities of the physical object. It also entails what Brown and Duguid (1991) called non-canonical knowledge, entailing the tacit knowledge necessary for making use of the physical object that would never be expressed in a formal description or procedure. An internalized understanding of the significant symbols of importance in NPD work was thus necessary to understand what various gestures and responses to gestures could imply.

Situations in which current expectations did not coincide with the actual development of events and led to inquiries often resulted in reconsideration of significant symbols. However, how they were reconsidered could take various forms. Inquiries can thus be important for reconsidering significant symbols. Hence, the understanding of what a "right product" should be, as a significant symbol, is continuously under revision; such revisions also occur because customer knowledge and experience with products change. Thus, for participants working in product development, it was important to pay attention to how competing products changed the expectations and understandings in the market about what a "good product" can be.

5.4.3 PHYSICAL OBJECTS AND COMMUNITIES OF PRACTICE

Communities of practice are characterized as informal groups of people who, through transacting around shared tasks and interests, develop shared knowledge and understandings of not just how to understand the tasks, but also how to understand reality and who they are in this reality. Physical objects can be tools for carriers of tacit knowledge within communities of practices (CoPs) (Brown & Duguid, 2001; Kleinsmann et al., 2007; Wenger, 1998). This means in practice that colleagues–across formal disciplines and divisions–who work closely together can develop shared understandings of how physical objects can and should be understood.

As participants usually relate to several CoPs (Wenger, 1998), they can also have several understandings of the meaning of physical objects related to the different communities. It might very well be that participants in NPD work in their interpretation of, for example, a product model interprets the model in differing ways from different perspectives. An indication of this is the following comment from a participant in the product council as a response to a new product model being presented: *"Those in production won´t be pleased when they see this…."* This comment indicates that the participant had a clear idea of how the production employees were likely to interpret the product, as a problem for production and, thus, a problem with efficiency. This comprehension can be understood as a significant symbol. Still, the participant also had the ability to interpret the product from the product council´s point of view as another significant symbol.

This participation in several CoPs, and thus the development of tacit knowledge in relation to several CoPs, could make the participants interpret physical objects from the perspective of several communities. However, a trait of CoPs is that membership depends on taking part in transactions with other members in the process of being socialized into the communities. For the participants in the product council, it was a premise for developing CoPs that they be placed in close physical proximity to production and have significant amounts of informal work

cooperation in performing their work. Thus, they had opportunities to develop shared understandings and expectations of the physical objects across disciplines (Kleinsmann & Valkenburg, 2008; Kleinsmann et al., 2007). If we see production employees and NPD employees as belonging to two different disciplines, then they need to have some form of shared understanding of what physical objects, such as production methods, can mean in practice. The internalized understanding of what a specific production method implies can thus be understood as a boundary object in the sense that it carries meaning across disciplines, but within the work community involved in the development work.

A reflection in contrast to this can be the way "outsiders" made other interpretations of the products. For example, in situations where potential customers responded to products not for sale, they did so without knowing how difficult the products would be to produce, how costly they would be, or how the products fit into the current product range. Thus, they could respond differently to the products as gestures than the participants in the NPD work had intended. "Outsiders" and their responses could lead to inquiries (Brinkmann, 2006) with the participants. These "outsiders" had not internalized the significant symbols regarding how a "good product" should look or what was possible to produce and could therefore make suggestions that would be "unthinkable" for the participants. This could make the participants reconsider their previous understandings of what would be possible to produce and sell, but not necessarily the same way as the outsiders had suggested.

5.5 SUMMING UP AND MOVING FURTHER

How do physical objects contribute to meaning-making in NPD work? This question cannot be answered without going into how meaning-making in NPD work actually is exercised. When I have chosen to focus on the role of physical objects in meaning-making, it is because that is often what meaning-making is about; what can the new product possibly be? I followed numerous NPD processes that developed in parallel, across one another and in succession. Numerous physical objects influenced the

meaning development, not just in relation to what a product could be, but also what a project could be. The various product- and project developments could be so interconnected that it demanded experience and competence to understand what underlying reasons there could be for developing a product, and what implications a decision in one project implicitly had for numerous other products, tasks and agendas.

Physical objects could have a communicative function by expressing meaning and a learning function by drawing attention to certain aspects. As a communicative function, the physical object–whether a production tool, an existing product, or a product model–enabled the participants to express and communicate meanings and expectations for what could possibly be. The meaning of a physical object was not static or necessarily unanimous. It was, however, socially embedded in shared expectations. Participants developed these shared expectations through transactions with one another in the work and with other communities related to the work. These expectations could develop into what Mead (1934) called significant symbols, directing meaning without participants questioning whether this was "right" or not. The division in the company's NPD work between products developed for sale and mass production and those developed not for sale or mass production can be seen as two such significant symbols in the sense that the participants who had developed an understanding of the work knew what it implied if a product model was presented with the comment: *"This is something made for a special occasion."* Participants in the NPD work thus needed to be socialized into the work, not just into the general routines - or what Brown and Duguid (1991) called canonical knowledge – but also into the tacit, local knowledge to fully comprehend what was going on. Numerous physical objects carried meaning and were used to express meaning and evoke meaning-making. As I have pointed out, the product models often were not made as *the result of* a thoroughly defined product description. Rather, they were made at a very early stage to function as tools for exploring meaning. A second aspect of this was that the product itself was often not the most interesting thing; of most interest was the meaning the model spurred in relation to other products, markets, and projects.

Physical objects as production tools, such as the trays in the tray project and the décor description sheet, can also function to frame meaning. In the two first cases, meaning was framed by the physical limitations of what it was possible to make on the machine and how big the surface was on the trays (giving the physical framework for product solutions). In contrast, the décor description sheet was a tool for both framing and communicating the instructions from designers to decorators, but without any physical transaction.

Learning from physical objects was often about experiencing how the physical object "behaved," for example, in production. It was by trying things out that the participants experienced the physical object and tested whether their expectations were confirmed or had to be revised.

This understanding of physical objects as tools for communicating meaning and for learning relates well to the research of Ewenstein and Whyte (2009) in that physical objects can be tools for both communication and learning and interpreted as boundary, technical, or epistemic objects. However, when the focus is on the communicative aspect of physical objects, it is typically as a way to convey meaning, not as a tool to evoke a response. This is better understood by the concept of meaning-making as a process of gesture-response (Mead, 1934). To a lesser extent, Ewenstein and Whyte (2007b, 2009) considered the relational aspects of meaning-making where the ability to use physical objects as tools for developing meaning also depended on the social plays conducted. This is a theme that I will address in the next chapter.

In conclusion, the role of physical objects in meaning-making is as tools for communication, for framing meaning, and for learning. However, for use as tools for communication, the participants must have developed a shared understanding of what meaning the physical objects can have, so-called significant symbols. In other words, if participants are socialized into the same community of practice, the physical object should evoke more or less the same response in all participants. As tools for learning, physical objects can be used to explore meaning through, for example, letting "outsiders" respond to the object. Physical objects can also be

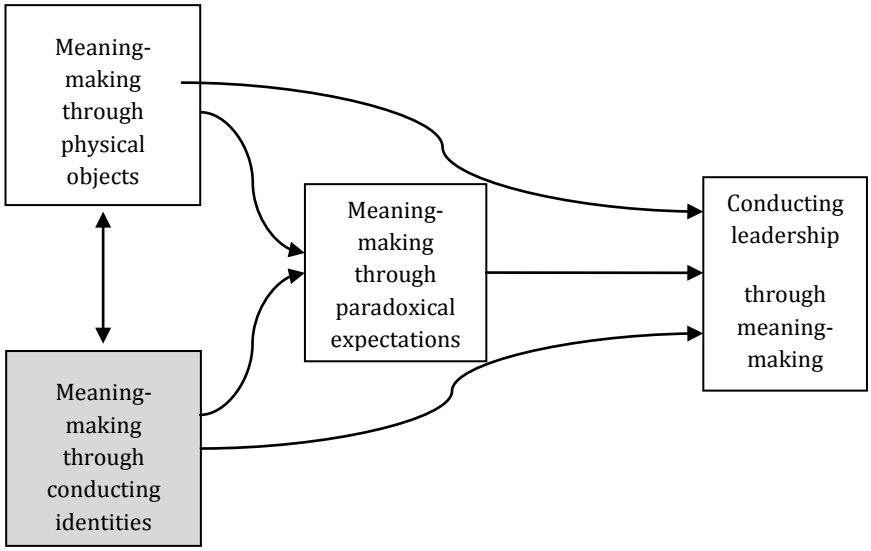
tools for learning through discovery of aspects of the physical object that were not intended. As tools for learning, physical objects are tools for inquiry. Thus, significant symbols cannot offer reasonable understandings in these situations.

The findings addressed in this chapter have several implications for how we understand leadership conducted in NPD work. First and foremost, as participants are expected to contribute actively to meaning-making, beyond the own core tasks, they need to take leadership initiative that cannot possibly be prescribed beforehand. They also need to adjust their acts to the situation, to what others bring in, and to the possible implications the development of events can have for other tasks and projects. Taking leadership initiative and following up on the initiative of others, thus, demands both self-leadership and co-leadership.

To be competent in work that was cross-disciplinary not just in terms of teams, but also in terms of tasks, and was conducted across products, projects, and processes, the participants needed thorough insight into production processes, market knowledge, product calculations, budgets, and how various tasks and routines were connected. Developing newcomers into competent participants thus become an important leadership task.

The development of significant symbols and the ability to take the attitude of the generalized other that I have addressed in relation to physical objects is closely connected to the development of Self. In the next chapter, I will address the role that Self can play in the ability to explore and exploit meaning in NPD work, before pointing out in Chapter 7 how various and sometimes paradoxical expectations in the same situation can lead to challenges, but also possibilities for creative action. These three main aspects of meaning-making in NPD work will together form the basis for discussion in Chapter 8 of how leadership in NPD work is conducted through meaning-making.

6 CONDUCTING IDENTITY IN NPD WORK



For participants to come up with innovative ideas, sometimes in conflict with formal goals and strategies, present those ideas to others, and implement the ideas through their launch, there is often a need for leadership in terms of support, protection, and product championing (Burgelman, 2002; Chakrabarti, 1974; Quinn, 1985; Van de Ven et al., 1999). Thus, we would expect an innovative work environment to be supportive and encouraging, protecting the participants from negative critics who could inhibit their will and ability to present novel ideas. Taking a relational approach to reality we would expect negative responses to be a problem as it probably also will lead to re-interpretations of the participants receiving the feed-back making them less capable of taking chances. Hence, to obtain a more comprehensive understanding of how leadership is conducted through meaning-making in new product development (NPD) work, we need to look more closely at how the relational aspect of the work is conducted.

As the relational approach sketched in chapter 2 sees meaning and identity as co-constituting one another through transactions, the focus on conducting Selves becomes central for exploring how meaning develops in NPD work. "Conducting Selves" here means how participants conduct their Me´s in transactions. As individuals have differing Me´s in relation to different relationships, groups, and communities to which the acts conducted are directed, individuals adjust their gestures to accommodate those with whom they transact. Having developed Me´s, significant symbols, and the attitude of the generalized other toward oneself in the situation does not just enable the participants to develop relevant expectations of how to conduct the work. It also leads to habits and "scripts" for how various tasks and transactional situations develop. However, the Me´s are in a constant process of becoming, just as meaning is. This means that identity – or Self – is not a constant factor, but rather under development and consisting of both the subjective I and the objective Me´s.

There is an important distinction between conducting roles and conducting Selves, although Selves are also conducted through role performance. Roles are typically more stable, impersonal, and possible to distance, while Selves are personal and constantly in the process of becoming through transactions. Selves appear to be more directed by gut feelings internalized in the participants. This might be why participants often respond emotionally to other participants not conducting themselves in accordance with the activated Me´s in the situation. This chapter explores and discusses how the conducting of Selves played a part in the meaning-making, addressing the second research question:

How does identity play a part in meaning-making in NPD work?

The focus is on how expectations of the way participants should conduct themselves in various situations and in relation to various individuals, groups, and communities, varied and how this influenced the ability to perform the work tasks in transactions with others.

Observations indicated that participants had a very conscious understanding of how to conduct themselves in, for example, discussions

around product models and how this conducting of Selves had an important impact on their ability to perform their work. I start by describing an episode that drew my attention to how they conducted identity in a way that I apparently had been overlooking in my observations.

6.1 WHAT DREW ATTENTION TO THE CONDUCTING OF SELVES IN NPD WORK

Although at the outset I had expectations of identity being important in relation to, for example, what participants could do or not do, *the way* they conducted themselves in many situations differed from what I had expected. I expected the product developers and designers to be enthusiastic, creative, and "loud." Instead, they came across as systematic, sober, and emotionally detached from the tasks. I sometimes felt uncomfortable about their behavior, for example, in situations when they did not respond as supportively or enthusiastically as could be expected. Over time, I understood that my expectations of how they should be overshadowed my ability to see what was actually expressed in the transactions. The participants often expressed "who they were" to me, but in the beginning I was unable to grasp what this really meant for how they conducted themselves in their work.

The situation leading to my inquiry occurred as follows: During my fieldwork, I followed the work in the casting workshop. There I also got to try out some decoration techniques myself. As I arrived at the NPD department one morning, one of the product developers came with my decorated plates to show me the results of my trials. I was impressed by the outcome. My hesitant sketches made with a brush were here materialized in solid porcelain. My enthusiasm over the results did not go unnoticed. The others present began smiling and looking at each other; some started laughing. I asked what was so funny and one of them said: *"It´s your excitement over your own work."* Another person came into the room, wondering what they were laughing at. A designer said: *"Now I am Kristiane, having got my decorated plates back from glazing: 'Oh look they´re fantastic!'"* The scene was played. The newly arrived colleague

looked at me, puzzled, and then smiled. The others laughed. From the various reactions, I understood that what I had done was not consistent with expected behavior. However, as a researcher and an amateur in the product development setting and thus not "one of them," I could get away with doing strange things. This episode made me curious and drew my attention to how *they* presented their work and commented on the work of each other. How did *they* talk about their own products and outcomes of work efforts? How did they respond to the work of others? What were the do´s and don´ts for how to discuss product models, sketches, and design suggestions?

Based on further observations of how participants conducted themselves in product discussions, I came to understand that the product developer or designer should not act in ways that could inhibit the ability of others to come forward with their comments, questions, and suggestions for how to take the NPD work forward. Bragging about one's own performance or expressing strong ownership of a physical object could inhibit the response of others if they felt that comments on the physical object indirectly also were assessments of the product developer. The product developer and designer acted as the providers of tools with which the group could work. The others had the tasks of responding to the tools, providing information, raising various questions, and suggesting in what contexts the tools as products or projects could be interpreted. Why do I relate these "norms of conduct" so closely to identity instead of calling them role expectations or role performances, as this in a way might appear to be more accurate? The reason for seeing norms as being connected to identity was how participants expressed the reasons for acting the way they did and responded to breaches in these expectations. The response I got to my "breach" in how to relate to my own "product" was not just laughter, but also an expressed feeling of slight embarrassment over being witness to it. In other situations where outsiders expressed ownership and contentment with their own achievements, it was often expressed that *"[this] attitude would not work with us."* This quotation can be interpreted as a rejection of working with participants who express self-contentment and ownership in the products underway in the process. However, it can also be understood as

underlining that this was far from *how they worked.* It was thus the participants themselves who expressed expectations of what to do as connected to who they were.

6.2 CONDUCTING IDENTITY IN PRODUCT DISCUSSIONS

I will now address how meaning-making and meaning-makers in the NPD work co-constituted one another. If meaning development has both relational and task-related aspects, then how the participants understand themselves and others to be in the situation will also influence what they see as possible responses to the situation. Likewise, meaning development in the situation will also influence who the participants become in the situation. Consequently, to enable one another to do their part in the NPD work, the participants must conduct their acts in ways that also make it relationally possible to conduct the work in a good way. As will be demonstrated below, this could be a potential challenge in presentations of product models and design layouts in the company.

6.2.1 CONDUCTING IDENTITY AROUND PRODUCT MODELS

Situations where new product models or design layouts are presented for assessment by the product council or project meetings can be experienced as potentially risky for those who developed the presented objects. In such situations, they present a tangible result of their efforts and thus their competencies. Having products or layouts rejected can be interpreted as having one´s work rejected. On the other hand, the participants responding to the product models have a responsibility to dismiss products that should be taken out and to bring in relevant information and suggestions for how to take potentially good ideas further. This means that personal considerations, such as the well-being of the product developers, could constrain the ability to assess the product models. A further consequence of having ideas dismissed can be that product developers become too focused on repeating foregoing successes, rather than taking forward bold ideas that might question the current understandings.

A way to reduce the possibility of participants taking product rejections or objections the wrong way is to develop patterns of interaction – like social plays – that make misinterpretations less frequent. Social plays are typically developed through numerous transactions over time, where the development of events is guided by developed habits and the expectations of the conducting of Selves. I will point at some of the social plays encountered in the NPD work in the company. The first example illustrates how both meaning and meaning-makers develop through transactions and how addressing the task-related work can lead to unintended understandings of who the participants became.

The example in mind was the standard décor project where the designers were supposed to work together on various designs. In one field conversation, I asked two of the designers in the project why they had decided to work more closely together on the various designs and one of the designers replied:

Designer 1: - *The idea of making some common design proposals has to do with developing a feeling of shared ownership in the products. For example, if we have been working for weeks with some designs and are presenting the results, and then none of my designs get to be chosen, then I partly feel that my work effort has been in vain.*

Designer 2: - *So if we have chosen one design of one designer, it feels like we also almost have to choose a design from the other designer.*

Designer 1: *By developing designs in co-operation, we avoid thinking about design and person in this way. Then it is in a way 'everyone´s' proposal that is rejected.*

We saw here how the designers could become self-conscious in situations where the designs to go forward were selected and how they also saw that the relational aspect of the selection process could constrain the others in selecting the designs "for the right reasons." By changing the way they organized the work, working together on the various decors, they reduced the possible implicit meaning of the selection – that one

designer was preferred over the others. This enabled the participants to detach the relational meaning from the task-related meaning.

In this example, the social play was redefined by reorganizing how they developed the designs. In other situations, the social plays could be more difficult to identify, as the expectations of how to conduct them-selves was characterized more by the downplaying of expressions than by their expressed meanings and feelings. Two differing ways the social plays operated in the NPD work in the company are described here.

The first type of transactional situation was in the product council where a new product model or design was presented. In such situations, the product developer usually very plainly commented on the idea behind the product and its potential uses. What puzzled me about these presentations was that the product developers and designers did not make any comments relating the physical object to them-selves. They did not mark "ownership" of the product model in the form of comments like: *"This is some of the best I have made"* or *"I am very pleased with this."* In fact, they did not make any assessments of the object in relation to themselves. This *active act* of refraining from marking ownership of the product invited the other participants to do their part of the work, to express their responses to it, to elaborate on what this could mean for the development of a certain project, and to assess the production possibilities and connections to other products and projects. The product was a gesture for others to respond to, but *the way the gesture was made* could also possibly inhibit or constrain the ability of others to make useful responses.

Through a detached way of presenting product models and layouts, the product developers and designers enabled the others to use the physical objects to explore possibilities, without the need for relational considerations. However, to do so, the other participants also needed to refrain from making personal comments or assessments that could be interpreted as good or bad. A comment that illustrates these norms is the following quotation where one of the experienced participants in the product council after a meeting expressed irritation over one of the

newcomers and her contribution in the discussion: *"…Saying that she likes the product doesn´t bring us any further."* This comment was not just a superfluous comment. It was also a comment that also potentially connected the assessment of the product to an assessment of the product developer. This could lead to further comments being interpreted in another light, leading those further comments to be less critical.

Observations indicated strong norms for how to conduct oneself in the various work tasks and transactions. However, they could be difficult to notice unless somebody broke them. This was especially when someone reacted to others' failure to live up to the norms that I became attentive to the importance of and adherence to the norms. If the designer very clearly marked personal ownership of the product model, then it would be much more difficult for others to take a critical approach to the physical object, to suggest alterations, and to dismiss the whole product idea.

The second example where this was the case was when an external designer was asked to develop signature plates for a chef and the company was to produce the plates. In a meeting with the external designer and two product developers in the company, the product model was discussed. The product developers suggested adjustments to the design, pointing at possible production problems and reduced functionality of the current model. The external designer said: *"The chef sees this product as his signature product, and I don´t think he would like others changing it."* This comment changed the whole dynamic in the meeting. It suddenly became clear that the model was not open to discussion, and the external designer was not interested in advice for how to do his job. The task of the internal product developers was suddenly redefined from providers of relevant response to the model to taking the model as-is into production and handling the problems there. Now, transacting in relation to the product model in situations with only "internal" members could be very different from transacting in relation to product-models where the designer was external. While in the first example it was expected that participants would bring in relevant suggestions for interpreting, improving, or rejecting the product model,

such comments in the second example could be interpreted as expressing less respect for the designer and his work. In this second example, the product developers responded quickly to the designer's comment, seeing it as a cue to change the play.

We might interpret the acts of both internal and external product developers as very self-conscious and sensitive to criticism. However, we should also keep in mind that identities also carry with them obligations. Take the first example; if the product model was interpreted as a measure of the competence of the product developer, then he/she would be almost obliged to make something in line with the shared understandings of what a good product could be. However, if the purpose was to foster a discussion of what a project should be about or what properties a product solution should have, then the product model should evoke responses related to this.

The external designer, on the other hand, would not have any discussion about what the product should be. He had to legitimize the need to include him in the project. His value and assets in the situation were connected to him as a "brand," as a known designer. The internal product developers were part of a team where their focus was on contributing to success in the shared efforts of the company. Transacting the way they did helped to uphold the identities they had with one another. However, it inhibited their ability to improve the product model. These two examples illustrate that norms existed for how participants should conduct themselves and perform their work tasks in formal meetings with different participants, and these norms influenced on the ability to do their work-tasks. However, the conducting of identities also played an important part in informal transactions.

6.2.2 IDENTITIES AS IMPERATIVE FOR TRANSACTIONS

In 5.2.2, I pointed at how physical objects also could function as learning tools. For example, if someone from production asked one of the product developers to come down to production, it was usually because something unexpected had happened in the production of a product. This

could be an unforeseen problem with how the new product "behaved" in production and involve identifying measures that could solve the problem. The production employee might already have an idea or possible solution to the problem, but still would want to talk it through with the product developer. Through these transactions, the product developer and the production employee each could contribute with interpretations as to why the problem occurred.

These occurrences needed not be serious problems; they could also be smaller, but unexpected observations. Hence, the production-employees could and would in many situations possibly just go on with the work without involving others in their inquiry. They might not experience it as inquiries at all.

What to take further was an individual decision. Consequently, the one closest to the problem or unexpected occurrence had to understand the occurrence as something that might be interesting or important for others to know about or discuss. In other words, there would be an anticipation of others wanting him and expecting him to take such observations further. This would probably not be a formal expectation, but an individual and relational expectation based on the understanding of who one could be in relation to others.

Product-developers and designers often involved production-employees in informal discussions of how to develop the products and how to solve production-challenges. *Whom* to involve usually depended on the task in question, and whom they thought could contribute to take the work-tasks further. This was not just a question about who conducted what kind of work, but also about whether one was understood as interested in being involved in such exploration. These identities also developed over time. For example, one very quiet production-employee whom initially had appeared to be only interested in doing his own job had after being asked to figure out a solution to a specific problem, shown him-self as both interested and a good person to involve in these often ambiguous challenges. This led to the production-developers continuing to involve

him in various upcoming challenges, as they expected him to be interested and capable of helping them out.

Due to short physical distances, close working relationships, and a company culture where people took the initiative to bring work further, it did not appear to be a high threshold for initiating these informal transactions. Probably it was just this relational coherence and expectation of the other being interested in hearing about what happened, about talking about the queries that might not be formally worth mentioning, but which could be discussed informally with an interested colleague, that enabled learning relationships to grow and function so well. However, this meant that participants had developed relevant expectations of who they could be in relation to one another beyond more formal roles and tasks. If the relationships between the production employees and NPD employees had been more distant, more formal, or less frequent, these transactions might not be initiated and realized as was actually the case.

Although relational work is typically part of direct transactions between participants, it is also part of work that is conducted alone, as tasks are interrelated.

6.3 RELATIONAL WORK CONDUCTED THROUGH INDIVIDUAL ROUTINE WORK

As part of an ongoing quality improvement project in the company, the routines for how tasks in relation to customized décor were handed over were changed. I return to the décor design sheet in 5.2.4. To ensure that the decors were placed correctly on the products, the décor tasks were now to be followed not just by the process sheet,[30] but also by a work description for how to place the décor. The new routine was intended to avoid misinterpretations, but this could be difficult to exercise in practice. As described by one of the designers:

30 Where the various involved participants sign by finishing their part of the task before sending it to the next person involved.

A very detailed description of something that may seem obvious may be taken as treating people like they are less competent. The problem is that one never knows who among the decorators gets the task. Some are very skilled; others need a detailed task description.

In this situation, the designer experienced paradoxical expectations as to what to do regarding the work task and in regard to treating colleagues with respect. This new routine was aimed at reducing the possibilities for misunderstandings, thereby enhancing the share of correct products. In this sense, the new routine was solely aimed at improving the quality of the work tasks. On the other hand, the designers who had to write this task description also understood that this new routine had to be exercised with consideration. What they wrote and how much they wrote could also be understood as showing respect and recognition – or lack thereof – toward the decorators. The designers had to assess how to formulate the task description to secure the décor performance at the same time they showed respect for the decorators and their competence. The relational work here was to formulate the work assignment in a way that enabled all decorators to perform their work task correctly, while at the same time upholding and nurturing good relations between the decorators and the designers. This also has to do with upholding the identities of the decorators. Upholding an identity as competent and skilled was necessary for taking the initiative outside one´s own tasks. This was important for the ability of participants to draw attention to discoveries and details that others might need to know.

This observation demonstrates two interesting aspects of a minor routine task: Relational work is also conducted like standardized routine work and how the routine task is conducted influences whom the decorators become in relation to the designers and vice versa.

6.4 CONFIRMING RELATIONS TO THE OUTSIDE WORLD

Just as the participants had social obligations in upholding identities and relations with one another, they also had such obligations in relation to other, more abstract communities, such as markets, design communities,

branch communities, and the local community. This upholding of relations and identities in relation to various communities should not be underestimated, although it is to a lesser extent focused on in the innovation literature. Upholding and confirming the understanding of identities and relations, and showing adherence to the social plays that involve these relations, is the same as being a professional co-player. NPD work is thus not just developing good products, but also supporting the products and their interpretations by performing identities that support the products in the right way. Upholding identities in relation to the outside world was accomplished in various ways. Through two different events I illustrate how participants and the company performed social plays prescribed for the various situations to uphold their identity and relations to various communities.

6.4.1 ADJUSTING THE PERFORMANCE TO THE AUDIENCE

At a trade fair where new products were launched, I experienced the demand for a completely different performing of identity from the designers than that expected within the NPD work in the company. I stood beside one of the designers and was talking with her when the press contact in the company came over to us. He said to the designer:

Press contact: *I wonder if you could talk with some of the press people about the new products now. They are waiting for you.*

Designer: *Yes, that´s fine.*

Press contact: *You might be a bit designer-like, you know. They expect you to be.*

Designer: *Ok*.

What happened here was that the task of the designer was to promote the new products to the press, and to do this in a professional way she needed to conduct herself in line with how the press people and society at large expected of her as a designer. The press contact probably needed to ensure that the designer remembered how to conduct herself in this

situation, but he did not argue why she should behave in this particular way or instruct her in detail. Two aspects became apparent to me. First, there was an explicit understanding - not just among the designers and the product developers, but also among others in the company - that "being designer-like" was not how they behaved in their daily NPD work. The downplayed, calm, responsible, and collective-oriented way the product developers and designers behaved in transactions within the company contrasted with the enthusiastic, creative personalities the press people probably expected to meet. Second, the participants in this described situation apparently shared an understanding of what it meant to be designer-like and in what situations this was the right way to perform identity. Hence, in this example, it becomes clear that performing Selves was not just part of the task-related work – promoting the new products – but also that participants cooperated in conducting this work.

Participants needed to conduct relational work to conduct their task-related work, and they often cooperated in this relational work. In the next part, I describe how task-related work apparently was conducted for the sake of upholding and confirming identities to the outside world.

6.4.2 UPHOLDING RELATIONAL OBLIGATIONS THROUGH TASK-RELATED WORK

One way to understand relational work is that any task-related act needs to be followed by some form of relational message to be interpreted the intended way (C. Wadel, 1999). Although this holds true, I also experienced times where a work-related task was conducted for the sake of confirming relations and adherence to a community. An example of such a situation is taken from a marketing council where whether to send an application for a design prize was discussed.

Meeting leader: *… Then it is this design prize, should we apply for this?*

Participant 1: *It is not important for the NPD department.*

Participant 2: *I would have thought so. It is surely important for sales.*

Participant 1: *I think the view on this is subjective. At the same time, if we show that we do not need it, it could be interpreted as if we somehow do not recognize and respect the ones awarding it. It could also seem like we think we have got enough prizes. We have to apply to signal our interest.*

Participant 3: *There can be many other reasons for applying for the design prize. Many in production appreciate these prizes.*

Participant 1: *Over the years we have spent much work and effort on such applications, often with little result, compared with the efforts.*

Participant 3: *I think we should apply on the XXX product, but we need to "learn" this process properly. If it is so that the criteria now are new, we need to learn these criteria.*

The main reason given for applying for the design prize was to show adherence and respect for the ones awarding the prize and for the prize as an institution. An indication of this is that exactly what product to apply on appeared to be of minor interest. *Not doing something* – as refraining from applying for the prize – is also an active gesture that possibly will evoke a certain response with the respondents.

Design prizes can be elements in a company´s self-presentation. However, for a design award to have an impact, it must be sought after and acknowledged by the community to which it relates. To uphold and confirm the relationship to the design community and to show respect for the design prize and the ones awarding it, the company should also apply for the prize just for the sake of applying. Upholding the value and appreciation of a design award is thus a co-operation between those awarding it and those applying for it.

Upholding and confirming relations with surrounding communities by performing identity in accordance with expectations is central to being understood as a serious actor in the market. Thus, it is also a part of the relational work necessary for realizing innovation work.

How identity played a part in the NPD work can be expressed as follows: There were strong norms for how participants were expected to behave

when conducting their work tasks, both alone and together with others. However, these norms were strong because they actually enabled the work tasks to develop more freely. As a consequence, the work could be constrained if participants did not understand or were incapable of conducting themselves according to the norms in the situation. The norms for how to conduct one-self and the work tasks varied not just with the work tasks, but more in relation to who one transacted with. The following discussion draws on the understanding of social plays (Goffman, 1959) as a way to understand how expectations to conduct and develop events are structured. Nevertheless, based in the understanding of Mead (1934) of how the Self consists of numerous Me´s and the I, we need to see this as a question of developing and upholding identity, rather than just fulfilling roles.

The fact that participants conducted identity in differing ways depending on the situation and who they related to can also lead to discussion of identities and communities of practice (Brown & Duguid, 1991, 2001) and what this can mean for the understanding of meaning-making in cross-disciplinary teams (Kleinsmann & Valkenburg, 2008; Kleinsmann et al., 2007). This is elaborated in the next section.

6.5 DISCUSSION

Because much of this conducting of identity appeared to occur without conscious attention, but was still strongly reacted to if participants did not live up to expectations, what factors guided this way of conducting identity in the NPD work? A close interpretation of this is to see it as the tacit knowledge participants need to have internalized to conduct themselves professionally in the NPD work. By drawing on the work of Mead (1934) and Dewey (J. Aasen, 2006; Bale & Bø-Rygg, 2008; Brinkmann, 2006), I will discuss two aspects of the role of identity in meaning-making in relation to communities of practice (CoP) theories (Brown & Duguid, 1991). I start by discussing how participants can be part of several communities of practice and how this can have implications for relational obligations. Next I discuss how identities also can be reconstructed through the development of events. Finally, I address how we can

understand enabling strategies as social plays and what this can tell us about the role if identity in meaning-making.

6.5.1 *SHARED UNDERSTANDING THROUGH COMMUNITIES OF PRACTICE*

The process of realizing NPD projects usually involves several disciplines, and these are usually confined to different parts in the process. In stage-gate models (Cooper, 1993), various experts in various disciplines are working on their dedicated task before handing it over to the next discipline/task. However, as Kleinsmann and Valkenburg (2008) pointed out, the task of handing over the project from one phase to another requires some form of shared understanding of the work and what it implies. Different disciplines could have different understandings of the work processes and also have developed tacit knowledge specific to their work task and discipline. To work in cross-disciplinary teams, the participants need to develop a shared understanding across disciplines.

In the NPD-work I followed this meant that the participants needed to have insight in much of the tacit knowledge of both production, marketing, sales and model-development. We could call this cross-disciplinary team for a CoP. However, some nuances in this understanding needs explaining.

The CoP theory focuses mainly on the shared identity within the community and the divide between the community and the outside world. Although this captures the focus on the shared tacit knowledge within communities and the role of identity as part of this tacit knowledge, Mead's (1934) understanding of how our identity entails both the subjective I and the numerous objective Me´s can provide a better tool for a more nuanced understanding of the role of identity in NPD work.

Taking on the attitude of the generalized other enables us to see ourselves and our acts through the eyes of others (Mead, 1934). Drawing on the understanding of communities of practice, we can say that the

participants take the attitude of various communities in determining what others will expect of them in a given situation. However, the CoP literature focuses to a lesser extent on how the participants actually relate to and are part of numerous communities. An example of how participants related to several communities is when a participant in a product council, as a comment to a new product, said that *"those in production won´t be pleased with this."* This comment was based on the participants knowing not just about the production methods, but also of having internalized the attitude of the production employees in how they would respond to such a product. Taking the attitude of other communities, the participant also managed to bring in the voices and responses of various possible stakeholders and thus enabled the participants in the product council to consider whether it would be possible to meet this "critique" in any way by adjusting the product.

Hence, we should not understand the cross-disciplinary team as a CoP having developed a more or less unified understanding of the work, but rather as an internalized ability of taking the attitude of numerous communities. This means that the participants in the NPD-work have not developed their own understanding of production, but also developed the ability of taking the attitude of production towards the tasks in question. Taking the attitude of various CoP´s is thus not a constant factor, but rather under constant development through transactions. Hence, through new experiences with production the anticipation of what it could be possible to do, can develop and even radically change.

Another aspect of the understanding of participants having developed the attitude of numerous communities, groups and individuals through internalizing Me´s in relation to these, is that there cannot be a completely unified understanding of reality. Consequently, although participants in the NPD-work take part in the same discussion, their interpretations of what is being said will to some extent differ. However, if the understanding is unified to the extent that participants are able to transact in a meaningful way, the differences in interpretations often go unnoticed. For example, the comment about those in production probably being skeptical to a solution needs not be specified further, as

the participants will more or less understand what the comment hinted to. However, had I asked each of the participants about their interpretation of what the comment actually implied I probably would get as many different interpretations as there were participants.

Another aspect of relating to several communities simultaneously is when differing communities of which one is a part have different expectations for how one should conduct oneself. For example, the product developers and designers were part of the NPD work community in the company, but they were also part of a larger community of product developers and designers on a more global scale. The understanding of what it meant to be a designer within the company and what it meant to be a designer in the company in relation to the global design community could be two completely different things. Nevertheless, both understandings were part of what it was to be a designer in the company. Consequently, participants of communities develop a form of shared identity within the community not just by transacting within the community, but also by transacting with "outsiders" as a member of the community. It is through transactions with outsiders that one can understand who others understand one to be. Useful knowledge and competence in the NPD work is not an asset that the NPD work community built within the community, but might be about having developed the ability to take on the attitude of others toward oneself and the community.

I have now focused on the aspect of CoP´s mainly with the task-related work in mind. However, taking the attitude of others to the work-tasks also has relational aspects to it.

6.5.2 RELATIONAL OBLIGATIONS, RESPECTFUL ACTS, AND THE CONTINUOUS PROCESS OF BECOMING

Communities of practice (Brown & Duguid, 1991, 2001; Wenger & Snyder, 2000) have typically focused on knowledge sharing, learning, and identity, but have been criticized for to lesser extent focusing on and capturing the importance of the informal, work-related transactions that

enable participants to conduct their work (C. C. Wadel, 2007, p. 22 Article1). Relational obligations and respectful acts can be factors in these informal, work-related transactions that can enable the work, as well as constrain it, if not handled well (C. Wadel, 1999).

Observations from the study indicated that much of the relational work was about showing respect and consideration for who others were and could become through the transactions. This was not something one could learn through taking the attitude of the community of practice as such, but rather an embodied understanding of how to act, taking the attitude of the other toward oneself (Mead, 1934). One example of this is the response one participant had to a colleague referring to those in production as "workers." Although no "workers" were present in the situation, the participant reacting to the utterance upheld a relational obligation in the company by insisting on everyone being treated as equals. This understanding of equality might be important for anyone's ability to take leadership initiatives in work.

During the discussion around whether to apply for the design-prize, the relational obligations and need to conduct relational work came up relatively quickly. Here the expectations of what response *the act of not applying* for the prize could evoke, and who the company thus could become in relation to the ones awarding the prize, was explicitly expressed. This could possibly be understood as an example of how respectful acts were used as a tactical act of upholding a "good mood" of the awarders. However, this derails the attention from something that appears to be far more central, namely what the lack of respectful acts possibly lead us to become. Wadel (1999) emphasized very well how any task-related act would have a relational aspect to it, and that this relational aspect would influence on what meaning the task-related act would come to have. But the temporal dimension that Mead (1932) emphasized is less focused on. I claim that the biggest consequence of not being able to fulfill relational obligations is not necessarily the impact it has for the meaning developing in the present moment, but rather the consequences for whom the participants then become as a result of this meaning. These re-interpreted identities will again lead to re-

interpretations of the expectations to what it is possible to do. Consequently handling relational work in order to uphold and re-interpret identities in ways that are fruitful for taking the work forward is a central part of what we could call enabling leadership[31]. As such, power through influence and legitimacy will also be closely connected to the conducting of relational work.

Upholding identities and relations in transactions can be imperative for creating room for conducting the task-related work. In practice, this relational work is not first and foremost tactical acts for enabling the task-related work, but rather embodied understandings of relational obligations. In the NPD-work this was expressed as embarrassment or irritation when participants did not manage to conduct these respectful acts. Taking the attitude of others is thus vital for understanding what and how to conduct relational work in specific situations. Participants thus often need to help one another in such situations, making it possible to act in accordance with the various expectations of how to conduct one-self to be able to do the task-related work. However, as relations and identities are in the continuous process of becoming, this will also influence on enabling and constraining.

The understanding of taking on the attitude of the generalized other for guiding prospective action shifts the focus toward the future and what it possibly could be, rather than focusing on the past as a source of creativity (Mead, 1932). As Dewey (Brinkmann, 2006) emphasized, experience can inform our expectations of the future, but our orientation is directed toward what could possibly be rather than on the past. As our imagination of prospective action is informed by experience, by significant symbols, and by taking on the attitude of the generalized other toward ourselves in the prospective transaction, a consequence must be that participants with the same experience will probably have differing understandings of what others will expect of them in the situation. However, shared understandings of significant symbols will again lead to

31I will get back to this in chapter 8.

more or less shared understandings of how to interpret the experiences and what to expect of further developments.

Learning from discovery is a surprising gesture forcing us to reinterpret our understanding of the past and our expectations of the future. Part of this reconsideration will also be connected to identity. Experiences leading to inquiries cannot just make us reconsider our expectations toward the future as such, but they can also make us reconsider who we can be in the future. Hence, prospective possibilities are not confined to task-related aspects, but can also be found in the relational possibilities of becoming. This relational and dynamic aspect of NPD work is rarely touched upon. Rather, the focus is typically on how we can learn from experience and learn from one another, but not on the dynamic aspect of identities as also developing during the transactions or that the ability to imagine possible actions and to act also depends on the possibility of imagining prospective Me´s. Consider for example the situation referred to in part 5.2.2., where visitors at the trade-fair wanted to order the big Whale. This unexpected response from potential customers also possibly led to re-interpretations of who the participants saw themselves to be as a company. A possible interpretation could be to see themselves as a company that appealed to bold customers. And furthermore, - when they had solved the production-challenges - to see themselves as a company that through shared efforts managed to solve “impossible” production-challenges.

Developing such understandings of who they could be would again also influence what ideas and solutions it was reasonable to suggest. For example, being a company that was able to solve “impossible” production-challenges, a suggestion to go further with a product that was “impossible” to produce, could make sense. On the other hand, had the participants experienced great failures in parts of the NPD-work, this could also lead to an understanding of not being a company that handled this specific kind of work, and therefore keep away from specific tasks.

A relational approach based on the work of Mead (1932, 1934), Dewey (J. Aasen, 2008; Brinkmann, 2006; 1938), and Elias (1939) situates the

meaning-makers into the meaning-making, not as input factors necessary for reaching a prospective outcome, but as participants in the development as such. Hence, NPD work is not just more or less successful products that develop, but also the participants taking part in the development. The value and impact the development of a product can have on the NPD work cannot be measured in sales numbers alone, but must also be valued in relation to what the process did to the participants and what it enabled them to imagine as prospective possibilities. We could say that the NPD-work is successful if it has led to re-interpretations of Selves, enabling fruitful acts that otherwise would not be seen as possible.

In the next section, I show how relational enabling can be realized through social plays and what this demands of the participants. Helping one another to act in accordance with the expectations of various communities can be understood as what Wadel (1999) called respectful acts. Respectful acts are necessary for keeping participants in the transactions and for helping participants uphold their self-presentation. However, it also requires cooperation with others in situations where the expectations of how to act in relation to one community can collide with how one is expected to act in the eyes of another community.

6.5.3 ENABLING THROUGH SOCIAL PLAYS

What guides the understanding of how to conduct oneself and what responses to expect to prospective acts can be understood as the internalization and conducting of social plays (Goffman, 1959). Hence, it is through social plays that respectful acts, relational obligations and identities are both played out and in the constant process of developing. However, as participants are part of several communities of practice, they need to relate to and adjust their acts to their current community. Hence, they might need to adjust what play to play in accordance with the situation.

Newcomers had to internalize the social plays through which the NPD work developed. These social plays were guided by what Mead (1934)

called significant symbols. Examples of significant symbols in the NPD work in the company are a shared understanding of how a product council was conducted, how decisions were made, and what the various participants in the council were expected to contribute. Just as significant symbols *could* be shared understandings of physical objects,[32] they could also be understandings of how social plays should be played out in specific situations with specific participants.

The understanding of how communities of practice develop shared norms for how to conduct tasks (Wenger & Snyder, 2000) can offer understandings of how participants could have relevant expectations of how to transact also with people they have not met before. For example, shared norms enabled product developers to conduct themselves in accordance with the expectations of journalists although they had not met the specific journalists before. Through having internalized various significant symbols in relation to various groups, relationships, and communities (Mead, 1934), competent participants managed to foresee what social play (Goffman, 1959) the situation involved and who they could be in the situation. The expectations of how others would respond to prospective gestures were evoked through taking the attitude of specific others or more general others, such as communities or society at large (Mead, 1934).

Sometimes the primary function of a social play might not be to directly perform task-related work, but rather to uphold relational obligations. Observations from the discussion regarding the design-prize can be an indication of this. However, in this example the importance of upholding these relational obligations were also connected to upholding other social plays. The first one being the social play around design-awards: for them to be acknowledged as prestigious, they need to be sought-after by the design-community. So applications for design-awards are in themselves contributing to uphold the value of the award. Furthermore, awarded design-prizes can again be valuable requisites in both the development and confirmation of company-identity and in social plays in the market.

32 As pointed out in chapter 5.

Hence, in order to perform as an innovative and successful design-company, these design-prizes contribute to these performances. However, to uphold the social plays where such identities are confimed and developed, the design-community must contribute to them through their acts, for example through applying for the awards. A plausible way of seeing this is to think that it is basically about playing roles connected to a specific status in the transactions. I argue that this has more to do with identity than with conducting roles, as the "role conducting" depends on who the participants can be in relation to one another in the specific situation. Conducting identity is more closely connected to who participants experience themselves to be than just conducting a role. Identity is simultaneously individual and social, and it therefore cannot be reduced to roles connected to various statuses.

6.6 SUMMING UP AND MOVING FURTHER

This chapter has contributed to a more nuanced understanding of the hidden work in innovation-work, and how this plays part in the ability to take the meaning-making and thus also the work-processes further.

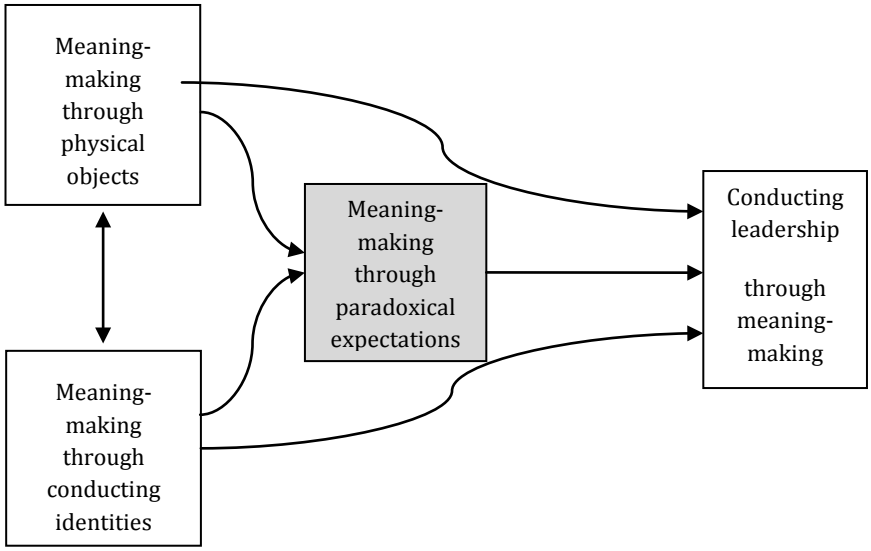
In order to conduct the work tasks in the NPD-work in transactions with others the participants needed to do relational work as well as task-related work. Relational work was not necessarily about expressing support verbally, but rather more expressed through how various gestures were conducted. Task-related work could even be conducted just for the sake of conducting relational work.

A central part of the relational work was to uphold and re-interpret identities that could enable further work. This also implied trying to avoid making gestures that would have a negative impact on identities and relations, and thereby damaging further possibilities. The relational work as well as the task-related work was guided by the ability to take the attitude of others upon oneself, imagining what responses prospective gestures could evoke in others. This means not just being socialized into the NPD-work community, but also to internalize the attitude of numerous related Communities of Practice. Part of the tacit

knowledge that these communities entailed were the internalization of numerous social plays where both relational work and task-related work was conducted.

The findings and interpretations of the findings in this chapter also have consequences for our understanding of leadership and how this must be conducted. If it is so that the gestures of the participants also influence on both the ability to conduct the work and for who the participants become through this work, then participants need to conduct both self-leadership and co-leadership in order to realize the work-tasks. Consequences for leadership will be discussed in chapter 8. Before that yet another aspect of meaning-making in NPD-work must be addressed: the role of paradoxical expectations in NPD-work. I have in chapter 5 and in this chapter addressed the role of physical objects and identities in meaning-making more generally. In the next chapter I will address situations where several, contradicting expectations of how to conduct oneself and the work-tasks in the NPD-work, appears to exist.

7 EXPERIENCING AND HANDLING PARADOXICAL EXPECTATIONS IN NPD WORK



In Chapters 5 and 6, I focused on how participants explored and developed meaning through physical objects and how identity influenced - and was influenced by - the meaning-making. However, as pointed out in the innovation literature (Adler et al., 2009; Magnusson, Boccardelli, & Börjesson, 2009; Zaltman et al., 1973), new product development (NPD) work is affected by various dilemmas, including that what is good for survival in the short term must be abandoned in the long term. Another challenge is that although both exploration and exploitation are necessary for survival, they call for two very different ways of working (Adler et al., 2009; Drach-Zahavy, Somech, Granot, & Sptizer, 2004; O´Connor & DeMartino, 2006). Hence, it is reasonable to anticipate situations of paradoxical expectations to emerge, where considerations for securing exploitation and efficiency simultaneously inhibit the just as necessary exploration. Researchers in innovation have mainly focused on the task-related aspects of innovation dilemmas. However, as addressed

in the previous chapter, identity and relational understandings of situations also influence the ability to conduct the work and how the work is conducted. Also, following the understanding of participants relating to several communities, groups and relationships, participants might also experience contradicting – yet valid - expectations in the same situation. I have called the various dilemmas connected to NPD work paradoxical expectations.

In this chapter, I address the third and last research question:

How do paradoxical expectations play a part in meaning-making in NPD work?

I will describe what the paradoxical expectations appeared to be about and how they appeared to be handled. Based on a relational approach, I discuss why these paradoxical expectations emerge, how they can lead to both constraints and enabling, and how they also influence the development of identity. However, as in the two foregoing chapters, I will present a situation from the NPD work that can serve to illustrate how differing expectations can be expressed in the same situation.

7.1 WHAT DREW MY ATTENTION TO PARADOXICAL EXPECTATIONS

As pointed out in Chapter 5, physical objects such as existing products and product models can be used for both exploration and exploitation. In other words, products can have different purposes, either contributing to profitability directly or enhancing exploration and thereby indirectly contributing to profitability. In the company, the exploratory and exploitative projects were categorized through the NPD strategy. The standard product range, front products, and "side projects" had different purposes and product characteristics that defined them and also guided their development. However, as I will illustrate with an example, this was not so straightforward in practice.

The example is taken from a situation where one of the designers was presenting new decors in the standard décor project for area managers in production and others from administration. All standard decors were

produced for stock, not by order. As part of the standard product range, they were also expected to be functional and durable. During the presentation, one of the area managers from production interrupted:

Area manager: *Is this supposed to be a joke?*

Designer: *No, what are you thinking of?*

Area manager: *This golden Whale will cost a fortune to have in stock. Have you thought about that?*

Designer: *Actually, we don´t intend to have them in stock. We will produce these according to orders being set.*

The discussion went on and the area manager drew attention to yet another product.

Area manager: *Are these Platforms supposed to be platina-plated?*

Designer: *Yes, but we do not expect to sell many of these.*

The various products were studied by the participants, lifted, and examined thoroughly. Some scratches were found in the platina-plated Platform. Another person from production commented.

Participant 1: *It is seldom successful to plate such a big surface with platina. The prima-percent will be very low.*

Area manager: *The saucer shouldn´t have platina as well. There will be scratches immediately as it is used.*

Participant 2: *Maybe there should be a written instruction following it, warning against rough use?*

Participant 1: *It is clear that it cannot have a guarantee against scratches on these special products, or we will have many returns.*

These products radically contradicted the understanding of what a functional product for the professional kitchen could be. They also contradicted the way standard products were supposed to be produced

and handled through the production and sales system. So, why did the designers come up with the idea of making these designs? How did they get the rest of the project group to go along with it? And how did they gain acceptance in the product council to take the designs further, set them into production, and launch them? There were apparently possibilities for breaking with the guidelines and NPD strategy without being stopped, although the strategy should be followed. This was difficult for me to grasp. I had noticed that paradoxical expectations were often expressed and started to categorize them and furthermore categorize the various ways the paradoxical expectations appeared to be handled. I will next describe the various forms of paradoxical expectations I experienced and how the participants appeared to handle them in the transactions.

7.2 FOUR FORMS OF PARADOXICAL EXPECTATIONS

Several examples exist of situations and themes where paradoxical expectations were expressed by the participants in the NPD work. I have clustered them into four groups: between exploration and exploitation, between formal and informal expectations, between conformity and conflict, and between tasks and relations. Some of the paradoxical expectations relate to several of the groups. I have also addressed this when it is the case. I will start with the paradoxical expectations I experienced as connected to the demand for conducting both exploratory and exploitative NPD work.

7.2.1 BETWEEN EXPLORATION AND EXPLOITATION

The demand for developing both exploratory and exploitative solutions in NPD work is widely recognized, but can this in practice be achieved? The dominant solution in the innovation literature and research is to separate exploratory and exploitative NPD work into two different streams. As mentioned, this was also prescribed in the NPD strategy in the company. However, when it came down to practice, were these streams really so separated from one another? Several observations indicated that there could be expectations for exploitative possibilities

also in exploratory projects and vice versa. Although the example given in 7.l. is the latter, it is indicative of how the process went from exploration to exploitation. Two examples can illustrate this.

An example where both exploratory and exploitative expectations occurred in a development process can be illustrated by the following conversation, which occurred in the product council. One of the product developers presented a product he had developed for a special occasion. He presented the product as, *"This is something I have made for this national team for them to use in the upcoming championship. I have made two of these, both by hand. I have used much of what we learned from the platforms here."* Another participant commented that *"these will be impossible to produce."* This comment appeared more like a joke as everyone knew that these products made for a special occasion were not intended for mass production or sale. The product developer replied, *"There will just be these two plates and it will not be set into mass production. But then again, that's what we said about the platforms as well."*

What did the product developer mean by saying this? On one hand, he presented a product that was never intended for mass production and sale as a piece of information to the product council. On the other hand, he indicated that if ever this product should be redefined into something worth trying to mass produce and sell, it would not be the first time it had happened. Now, what makes this an example of a paradoxical expectation rather than just two possible outcomes of a process? The difference is that the characteristics of the exploratory product were often in conflict with the criteria exploitative products needed to meet. In other words, if these extreme products made "not for sale" had been presented in the product council as initially intended for sale, the participants would probably dismiss them as they did not fulfill the criteria for such products. The platforms were products that initially were developed for a special occasion and that at the time of development were "impossible" to mass produce in the company. Nevertheless, later it was decided to redefine them and try to produce and sell them as front products. These often extreme products have probably been central to stretching and

moving the limits for what it was possible to produce in the company, leading to current production of several products that competitors rarely would try to produce.

Another example of exploratory work also potentially contributing to the efficiency of the NPD work was efforts dedicated to the "idea bank." Part of the exploratory work of the designers and product developers was testing ideas and collecting ideas and inspiration. This was accomplished by "making things not for sale" and trying out various ideas that did not fit into the ordinary NPD work. The other way of doing this was through inspiration journeys – taking photographs and sampling material that provided inspiration and ideas. This material was collected and sorted in themes by the individual designer. These themes and ideas were collected and mapped without any specific purpose in mind and could appear to be without any direction and something directly contradicting any effort to achieve efficiency. However, this archive usually referred to as "the bank" was on several occasions the reason why the designers managed to react quickly and efficiently to design requests where time was of the essence[33]. Although the work connected to developing "the bank" could be understood as less goal-directed and focused, it did nevertheless provide preparedness for responding quickly to specific ideas in various situations. Hence, more "unfocused" exploratory work could also be the source and tool for exploitation in a given situation.

The double-ness of the expectations the participants developed came to expression in various situations where possible outputs of the work were discussed. Often in the meaning-making there was in practice no clear division between exploratory and exploitative work, as both exploratory and exploitative aspects appeared to be investigated in the product and project development. On the other hand, the criteria for exploratory and exploitative objects were separated and upheld; the understanding of these two streams of NPD work was also upheld. Hence, a plausible interpretation of how the participants handled these very different, but also blurred divisions between exploration and exploitation was to

33 An example of this is given in sub-chapter 7.2.3.

uphold double logics, to uphold two contradicting understandings as both valid.

The paradoxical expectations between efficiency and exploration also appeared to be closely related to another type of paradoxical expectation, that between formal expectations and informal expectations. There were formal expectations for treating exploration and exploitation separately and differently. Simultaneously, the participants knew from experience that both exploration and exploitation were possible outcomes. Although the initial expectations were clear, events could led to reinterpretations of possibilities. The theme of formal and informal expectations will be addressed more broadly in the next part.

7.2.2 BETWEEN FORMAL AND INFORMAL EXPECTATIONS

In chapter 5, I pointed out how a model for a potential product was used as a mediator to explore meaning in relation to what the product could be, the project could be, and the purpose of the processes. The major function of product models and also the finished products was in many situations to serve as gestures for someone to respond to. It was through the responses the models and products evoked that the participants could develop some understanding of what could be.

Bearing this in mind, I was surprised when quite late in my study I was given the formal description of how the product development processes actually were organized in the company. This description was not so different from what Cooper (1993) described in his stage-gate model. The company description placed the development of ideas first, then the development of concepts, the development of the product idea, the development of models, production, and launching. Although any product development will to some extent follow this form, it did not capture the "nature" of the development work in the company. The physical object often materialized way before its meaning was developed. Products could also go into various concepts and solutions and thus change meaning long after their development and launching. Another shortcoming of the formal process description was that it represented the process as an

autonomous process with a clear start point and end point. However, one of the major findings in this study has been that products, projects, and concepts developed across processes, experiences, and meaning-making in relation to a number of occurring events. Hence, the formal understanding of how the NPD work developed was inadequate and sometimes also contradicted the actual experiences I had with how the NPD work in practice was developed. Hence, the participants related to a formal understanding of the process, while they also had other experiences that contradicted their formal experiences.

In another example, the participants apparently related to a formal "norm" while still having an understanding of not fully adhering to it. This example is their understanding of being "not so good on evaluation." This specific observation came from a field conversation with two participants, where we talked about how newly launched product solutions had been received in the market. I asked about whether they had some form of evaluation of how the various products and projects had turned out. One of the product developers replied, *"No, actually, evaluation is kind of a weak spot for us. We don´t run a proper evaluation."* Then he added, *"Come to think of it, that is actually something I think we need to do something about."* I was puzzled about this response because my impression was that the participants evaluated the projects and products thoroughly through discussions and by referring to previous development processes in new NPD projects. Typically, when I asked about how the launching of a product or project had been received, I usually got a thorough lesson about not just how sales had been, but also about what customers apparently liked or disliked and numerous hypotheses about why it had turned out as it had. From the comments I received, it was also obvious that products, projects, and concepts were part of daily discussions as participants often referred to what others meant. However, these evaluative discussions were not formalized in written documents and thus did not appear to be acknowledged as "proper evaluation work" by the participants themselves.

The participants in the company often expressed an understanding of being positively different from other companies, following their own

ways. However, at the same time, they also had an inclination to adhere to and measure themselves against an idealized understanding of what they saw as the "right way." Even in situations where they found solutions within the company that solved the challenges and the participants considered good solutions, they simultaneously often expressed a reluctance and even inferiority about their own solutions compared to the normative approaches to how such challenges were solved.

The way the participants handled these inconsistencies was, as with the exploratory and exploitative product strategies, through upholding double logics. They did this by conducting the work their own way, while still adhering to more general idealizations. Another strategy for handling these discrepancies was to perform different social plays in relation to different communities and relationships. It was, for example, an expressed wish to formalize routines and evaluations, although the work tasks were conducted well with the informal routines and habits.

The third form of paradoxical expectation, between conformity and conflict, is addressed in the next section. Here we also see aspects of the formal and informal expectations of what to do.

7.2.3 BETWEEN CONFORMITY AND CONFLICT

Conflict is necessary in developing innovations, but at the same time it can have a negative influence on efficiency. However, acting in conflicting ways can be challenging as it might be understood as counterproductive, a failure to comply, and being less than supportive. So, how was this experienced in the NPD work in the company? I address this theme in relation to two aspects, between upholding rules and breaking rules and between agreement and conflict.

7.2.3.1 Upholding rules and breaking rules

There appeared to be a strong sense of loyalty toward shared goals and setting the group before the individual. This also became visible in relation to the focus on adhering to procedures and rules; one needed to

stick to the rules for how to work. Or was it really so? Rules for how the processes should be conducted, areas of responsibility, and the like were formally defined through role descriptions and mandates of the councils and groups. For example, did the product council have the formal responsibility for which products to develop and launch or not? This was a straightforward procedure that involved few misunderstandings. Nevertheless, on several occasions, single individuals made such decisions without consulting the product council. Two examples of situations where individuals acted beyond their mandate, and apparently did so consciously, and where there were no sanctions for doing so illustrate this.

In the first example, one of the designers had for a specific design solution chosen a cup whose launch was decided against by the product council. The design solution could probably have been altered when the product council discovered that an "un-launched" cup being used. However, instead, the product council chose to launch the new cup. In the second example, one of the sales area managers had promised a completely new mingling plate for a new hotel project. The problem was that the mingling plate had not even been developed or discussed as an idea in the product council. Nevertheless, it ended up that the mingling plate was developed and launched.

These two examples of rule breaches had some common features. First, they appeared as conscious acts guided by a strong will. Second, they were conducted by experienced participants who knew the procedures and who in other situations upheld the rules. Third, the product council decided to launch the products despite the way the decisions were made. Fourth, the rule breaches were not covered up, but rather communicated within the NPD work. These observations led to the understanding that rule breaching could be accepted if the breach was something one felt strongly about. However, as others could come to comply with the rule breach, one also had to take responsibility for only using this option for solutions that one was convinced were good for the company. Rule breaking was thus a possibility as the rule breakers were not sanctioned and the breaches became "stories" that were mentioned several times.

Maybe the rule breaking was accepted because it was consistent with a strong norm that was several times expressed in the company: *"We do as we want to if we know we are right, no matter what the majority says."* We might say that although there were rules, routines, and procedures, the norm was that each participant also had to take responsibility for breaking the rules if that made better sense.

In some situations rule breaking did not just demand the acceptance of others, but also the direct involvement of others. One example of this is the realization of a tender for a big hotel project. The sales manager learned about the tender just days before the tenders were to be presented in Greece, and it would normally not be possible to develop such a comprehensive tender within the time frame. In the following sequence, the sales manager had together with two of the designers managed to make a design and décor concept in accordance with the tender specifications. It was, according to the designers, due to "the bank," the systematic collection of ideas and designs developed for other purposes or not used in other projects, that they were able to provide good decors for the tender on very short notice.

In addition to having several décor proposals in print, the tender specifications also asked for examples of the decors realized on products. This meant that the decors had to be transformed on film and prints made. These prints had to be dried after been lacquered. Then the decors had to be fixed to the products by hand to be fired before being packed and sent. The production coordinator and the printing manager were called to check whether it was possible to expedite the ordinary process time to get some decorated products ready for the presentation. I refer to when the printing manager and the production coordinator came into the room. The sales manager explained quickly what they were talking about: a tender comprising nine restaurants, at an estimated cost of xxxx, the date for presentation of the prospects for the tender, and that the tender demanded some of the decors presented as finished products. The sales manager and the designers left the room so that the production coordinator and the printer could discuss the possibilities in peace. The

printer started to assess when the products had to be ready for sending if they were to meet the deadline.

Printer: - *This means that the decorated products need to be sent on Friday, meaning that the prints must be printed Monday and Tuesday, decorated Wednesday and Thursday, and packed Friday.*

Production coordinator: - *Is it possible?*

Printer: - *It might be, but it means that we would have to set aside work that is already delayed. What customers should we put on hold?*

The production coordinator and the printer discussed how and what needed to be done and how they could do it to manage the deadline. Critical issues and problems that had to be solved were brought up. They asked the sales manager and the designers to come into the room again.

Production coordinator: - *We will work hard to realize this. This is like how we got the …. tender, that also happened because we all turned around very fast and got to deliver the tender. But it may be that some of you designers need to help out with the decorating.*

Designer 1: - *OK*.

Production coordinator: - *And [the printing manager] needs to have some of the decors down to her office already today, and the rest by tomorrow.*

Designer 1: - *Yes I will make the last design now immediately,*

Designer 2: - *I just have some adjustments to make before mine are ready. How many items do we need of each design?*

Here the production coordinator also expressed a wish to do "the impossible" and referred to other situations where "everyone" had to set aside their own tasks to meet seemingly impossible deadlines and solutions. In another situation, he expressed this as not just strength but also as positive experiences, where everyone pulled together to manage challenges. Not one of the involved participants pointed out that this was not the "right" way to prepare tenders and set orders for decorated

products into production. On the contrary, they rescheduled other pressing tasks to realize the tender.

I have now described the double-ness of focusing on rules and procedures on one hand, while still accepting and allowing for breaches on the other. Another aspect of the tension between conformity and conflict can be labeled as the tension between agreement and conflicting views.

7.2.3.2 Between agreement and conflict

Although there was strong loyalty to the company and to shared efforts and goals, conflict was also expressed as a characteristic of how people worked. As a participant in the NPD work, one had to live with and accept conflicts in the work. Although the purpose of the cross-functional teams was to voice differing opinions and perspectives and give participants a chance to influence the meaning development, this did not mean that agreement and unity necessarily were seen as possible to reach. The following quotation taken from a meeting where participants had very strong opinions about how to act illustrates this: *"We cannot expect that ten people will be able to agree upon one solution, but we need to do something to make things happen."* This comment could also imply that the purpose of the cross-functional teams was not to find a "right" and unified solution, but to explore differing aspects to obtain more interpretations. So, although people could voice their opinions, they also had to cope with disagreements about solutions.

This way of working in cross-departmental groups when realizing innovation processes, here especially NPD processes, can be effective not only for getting differing perspectives and views, but also for enhancing the level of conflict. This is enhanced when the participants challenge one another´s professional domain and the opinions and assessments provided. Although this form of cross-functional team appeared to be a natural way of working in the company in many tasks and processes, participants also expressed that this was a stressful way to work. Some comments indicating this are the following:

"*Of course, it is both tiring and time-consuming when 'everyone' seems to want to have their say in every little detail."*

"There are many persons involved in the various decision processes here, and some of us can sometimes feel that too many are involved."

However, this cross-functional and departmental involvement might not be only a right and privilege for the participants in the various processes, but also connected to some form of shared responsibility for the outcome of things. As I commented to a participant that people appeared to have a right to speak their minds, not just about their own narrow area of tasks, she replied, *"It is not just your right, it´s your obligation."*

By upholding conflict as a fact, the participants legitimated that conflicting acts were in a sense "right"; it was part of who they were and how they worked. This also implied that participants had to cope with conflict, seeing it as a natural and expected part of work. The antidote to conflict could be called "conformity." I never heard anyone claim that they were a conformist. This would probably not be consistent with their understanding of themselves. They did, however, talk a lot about equality, and implicitly this also appeared to be linked to a strong feeling of loyalty to the company and toward colleagues and work tasks.

The claiming of "different-ness" and "being conflictive" was possibly about legitimizing and normalizing acts that broke with the dominating norms in the industry and in business life more generally. In this sense, these understandings of identity created room for acts other than those that might meet the dominating expectations. This also led to creating paradoxical expectations between "being part of" and "being different from" and between being "conformative" and "acting conflictive." If the participants should live up to the normative understandings of the conduct of NPD work and NPD workers, they would probably have too little leeway to explore meaning. Seeing conflict and different-ness as central to who they were was thus a way to enable conflicting and "different" acts and approaches.

Paradoxical expectations in relation to conformity and conflict in the NPD work were in a way task-related, although they had strong relational aspects. The reason why conflict could be a problem for the transactions was that it often contradicted relational expectations connected to loyalty, supportiveness, and professionalism. In the next part, I will discuss situations where the paradoxical expectations were connected to tasks and relations or, more accurately, between tasks and the performance of identities.

7.2.4 BETWEEN TASKS AND RELATIONS

The last form of paradoxical expectations can be described as the expectations of how to conduct the work tasks in the best way and simultaneously live up to relational obligations to the different communities, groups, and relationships in the work situations. More directly, what appeared to be the best way or the necessary way to perform the work tasks would sometimes not be relationally acceptable or even fruitful. The reason why it is important to live accoring to the relational expectations has to do with upholding legitimacy in communities, upholding identities, and making others capable of staying in the relationships in the future.

In Chapter 6, I pointed at how there appeared to be strong norms for how to conduct one-self in transactions where product models under development are presented. What characterized the transactions was that the product developer appeared to detach himself from the model and signal this detachment by not making comments expressing ownership of the model. The participants needed to assess the products critically and thoroughly and bring in the relevant considerations to assess the work further. On the other hand, they also needed to enable the product developers and designers to take forward their bold ideas, to challenge the obvious solutions. How could they criticize product ideas while still encouraging ideas out of the ordinary? This paradox appeared to be handled by understanding the NPD work as teamwork where the product developers and designers were merely the providers of gestures in the form of physical objects that others were supposed to contribute to

take further, put on hold, or reinterpret in another context at a later stage. Keeping to the social play where participants were not supposed to make remarks that could turn the meaning of the conversation into an assessment of the product-developer or designer was a way of separating these paradoxical expectations of how to act.

In situations where task-related remarks led to negative re-interpretations of identities and relations, this could inhibit the further work. Either in the form of participants becoming reluctant of giving critical feed-back, or if critical feed-back was given; that the whole situation de-railed into hostility and participants wanting to withdraw from the transactions. An example of the last situation was the following situation from a market council.

The market council was – as the product council – cross disciplinary, consisting of all department managers exempt the financial manager, and also additional participants from designers, product developers, marketing and sale. In a market council where the lay-out for a new brochure was discussed, much of the same challenge as in the previous example emerged. This was the need for both being supportive and acknowledging the competence of participants while still pointing out the weaknesses, or alternative solutions for the task that should be considered. In this specific situation the brochure-lay-out had been presented by the project group consisting of participants from marketing and one designer. One of the department managers as well as others from product development had strong objections as to how the lay-out was solved. They meant that the order of which the products were presented would send out the completely wrong message. This led to a discussion about what the purpose of the brochure was, what the purpose of the NPD-project the brochure should represent was, and how the NPD-strategy should be interpreted. The mood in the meeting had changed from positive anticipation to hostility and even expressions of annoyance. The focus on the brochure appeared to de-rail into a discussion about who should have their say in marketing matters. It was first when the designer in the project group made some self-ironic comments about the brochure and how the work task could be taken further, and the

participant that earlier had voiced the critical remarks, followed up by replying to the humorous comment in the same style that the group began to focus on the task again.

In this meeting it became obvious how challenging it is to relate to cross disciplinary councils and work groups and still uphold and defend own territory. Participants needed to cope with the interference of others, also on issues that they themselves should be experts of. One of the participants expressed this normative expectation of interfering in a comment given to some newcomers that after three months still were relatively quiet; *"You´re supposed to interfere in the work of others. I´m supposed to interfere in your tasks and you´re supposed to interfere in mine."*

This expectation of challenging solutions created by participants that are skilled in their tasks can easily collide with the need for upholding identities as professional and capable. In chapter 6 I addressed the need for upholding relational obligations and how this was often done through respectful acts. In the example from the market council criticizing the brochure-lay-out might very well be seen as a disrespectful act coming from someone within another discipline. However, the participants in the project group could themselves choose how to respond to the critique.

Through the self-ironic comments the designer made in the market council, she upheld an identity as professional and capable of playing the social plays necessary for conducting the work also in situations of paradoxical expectations. By expressing role-distance to herself as a designer and part of the project group, she confirmed herself as a professional co-player. By following up on the humorous comment of the other participant – having voiced the critique in the first place – demonstrated that this critique was not an attack on professional integrity. Together the two participants were capable of voicing and addressing the critique and still uphold professional integrity. However, this was probably not an understanding shared by all participants. Later on this meeting was referred to as an example of a situation where the cross disciplinary way of working had gone too far.

Humor was also used for creating paradoxical expectations. By using humor, participants could make suggestions that might be too bold or draw up extreme scenarios. Although the expectations of the designers and product developers in the company appeared to involve delivering work of good quality, taking economic responsibility, and adjusting to and involving others in finding the best solutions, the more "stereotypical" understanding of designers as creative, humorous, and "wild and crazy" was in various situations also played out in the company as a way of making "unofficial" suggestions without being judged as less professional or capable.

Humor also had a place in meetings. The "serious agenda" was often interrupted by humorous comments that the various participants often followed up with "playing out" the humor before just as quickly returning to the work tasks. Humor appeared to create room for making alternative interpretations of the situation, for giving oneself and others a lifeline to get ashore in situations that became difficult. With the use of humor, participants could more easily change between social plays. It created ambiguity about how the gestures could be interpreted, playing over the initiative for choosing an alternative interpretation of the situation. This often created a sense of double message; what was said and done was not to be taken as anything other than a joke, and simultaneously what was said and done could be responded to as serious. Several examples of product solutions appeared to have been proposed as jokes, but were nevertheless taken further and built on by others. With humor, participants could say things "without saying them" and do things "without doing them." Humor could also be used to create distance from participants' roles and role expectations through demonstrating self-irony in their role performance.

The participants often highlighted the necessity of humor and using humor actively in the work. One comment about the necessity of having a good sense of humor to work in the company came in a conversation with one of the participants after I had commented that employees joked a lot in their work. The participant continued, *"It´s the same with customers. If*

the customer has a good sense of humor, it is much easier to find the good solutions."

Humor could thus be both a creator of paradoxical expectations and a way to handle paradoxical expectations, as humor itself is often a source of ambiguity. If one says something in a humorous way it can be interpreted as a joke, but it can also be seen as a message that is delivered indirectly. In this sense, humor also provides a form of protection, as it is possible to offer suggestions without being measured by them. Humor can be a form of creativity and a tool for communicating paradoxical expectations. It also appeared to be a tool for handling paradoxical expectations. By using humor, the participants could acknowledge the paradoxical expectations while still not clearing them out. By emphasizing the centrality of using humor in their work, they also linked humor to "their way of working" and thus also to who they were and how they conducted themselves.

The first three forms of paradoxical expectations (between exploration and exploitation, between formal and informal expectations, and between conformity and conflict) appear to be related to the work tasks. There are, however, relational aspects of these forms of paradoxical expectation. Nevertheless, I have also addressed paradoxical expectations between tasks and relationships as a special form of paradoxical expectation. Based in a relational approach, I will now discuss possible reasons for why these paradoxical expectations emerged and why they were handled as they were.

7.3 DISCUSSION

Why did the participants experience and express paradoxical expectations in the NPD work? A plausible interpretation is that the development could go in expected and unexpected directions and that the innovative potential often lay in the ability to use both the expected and the unexpected possibilities emerging. This understanding is based in Mead´s (1932) concept of temporality, where both the understanding of the past and the expectations of the future are realized in the present

moment. This means that what happens in the present can lead to reinterpretations of the past and the expectations of the future.

Bearing this understanding of temporality in mind, I will now discuss the emergence and handling of paradoxical expectations in relation to the conducting and development of Selves, the role of significant symbols in the development of meaning, and Dewey´s understanding of inquiries as sources for creative action (Elkjaer & Simpson, 2006). In the previous sub-chapter, I pointed out that the paradoxical expectations experienced in the NPD work could be divided into four types. The purpose of this was to highlight various aspects of the paradoxical expectations as I have interpreted them. Here, I address the four types together, as they do not just overlap, but are parts of the same understanding. The first theme addressed is how the understanding and development of Selves and internalized significant symbols can provide insight into why paradoxical expectations emerge and how this understanding relates to the understanding of communities of practice (Brown & Duguid, 1991, 2001).

7.3.1 DEVELOPMENT OF SELVES, SIGNIFICANT SYMBOLS, AND PARADOXICAL EXPECTATIONS

Realizing that both the expected and the unexpected can be the likely outcome of any situation, I will start by addressing the role of significant symbols in understanding why paradoxical expectations developed and how they were handled.

By taking part in the NPD work over time, the participants had developed an understanding of both the formal description of how the NPD work was developed and the informal way it usually developed in practice. Brown and Duguid (1991) would probably call this the canonical and non-canonical understanding of the development work. These two understandings can be seen as significant symbols because by a simple cue referring to one of the significant symbols the participants could evoke the same responses in the other participants as in themselves. Just by saying, "*…well, that was what we said about the Platforms as well…*," the other participants knew what was implied. The possibility of a

paradoxical expectation was suggested. Brown and Duguid (1991) proposed that the canonical understanding is represented by the formal leaders, the non-canonical understanding by the employees socialized into the communities of practice (CoPs). This understanding does not align with Mead (1934) and his understanding of how Selves are constituted of both the subjective I and the objective Me´s. Following Mead (1934), the participants have internalized both the formal understanding of the NPD strategy and the informal understanding of how the processes developed as part of themselves. An example supporting this understanding is the response from the area manager in sub-chapter 7.1, who spontaneously reacted to the products that contradicted the NPD strategy. This was an embodied response from one who had internalized the NPD strategy as a shared commitment, and it did not come from the formal leaders in the NPD-work (Rylander & Peppard, 2003). The NPD-strategy was thus not something that only formal leaders in the NPD-work related to, but something that was more or less embodied in all employees.

In most situations, we relate to several significant symbols and also sometimes several Me´s. This need not be a problem in itself. The problem emerges when the expectations about what you can and should do, for example, as a professional within a discipline contradict the expectations for how the work tasks are conducted within the work group. This also occurs when living up to the expectations related to one relationship appears to inhibit the possibility of living up to the expectations and obligations of another relationship just as valid in the situation. Hence, a plausible answer to why participants experienced paradoxical expectations in the NPD work was that they had expectations and obligations as to how to conduct the work in relation to numerous significant symbols and Me´s and these expectations could contradict one another. These expectations were not forced on the participants in the situation. They were activated by the participants themselves. By taking on the attitude of the generalized other, they evoked the expectations of others upon themselves in the specific situation.

Based on Mead's (1932, 1934) understanding of the temporal and transactional, I have provided an understanding of why paradoxical expectations emerged in the NPD work and discussed two of the observed handling strategies. Next, I discuss how paradoxical expectations also can lead to creative acts, and here I will draw on the understanding of inquiry (Bale & Bø-Rygg, 2008; Brinkmann, 2006; Dewey, 1938).

7.3.2 INQUIRIES AND POTENTIAL BENEFITS OF PARADOXICAL EXPECTATIONS

One special form of paradoxical expectation can appear in situations where the existing expectations cannot explain the emergence of events and thus "force" the participants to reconsider both reality and the expectations of who one becomes in this reconsidered reality (Bale & Bø-Rygg, 2008; Brinkmann, 2006; Dewey, 1938). In the moment when the existing expectations are not consistent with the emergence of events, the participants can act creatively, freed from the Me´s and the significant symbols that usually guide their work. The spontaneous I is activated. These spontaneous acts can lead not just to unintended outcomes, but also to the reconsideration of Selves and reality in ways that expand the possibilities in previously unimaginable directions.

Extreme products developed through "side projects" might very well increase the emergence of paradoxical expectations connected to the physical objects because in themselves they are more ambiguous, evoking a broader range of possible responses. In situations of inquiry, participants are forced to reconsider their understandings of reality and themselves in relation to others because their previous understanding is no longer valid. Thus, inquiries can lead to reconsideration of a specific situation and also have consequences for many aspects of future work. For example, for the recycling project presented in sub-chapter 5.3, the product model that was cast with the recycled clay mix had thicker walls than expected, which led to the realization that the recycled clay mix cast faster than ordinary clay mix. This realization led to new agendas for

resolving a bottleneck in production. However, this was not the initial intention with the recycling project.

In their study of product development within the medical supply industry, Brun et al. (2008) found several benefits of upholding ambiguity in projects. By following several development processes, fall-back options were created and time saved in situations where the main development process failed. However, according to Brun et al. (ibid.), the benefit of ambiguity has more to do with a deliberate strategy for holding several options open, a strategy Quinn (1985) also advocated, than the inquiries I focus on here. What I have focused on in this part is not the deliberate exploration of different options, but the inquiries that emerge in the work that lead to novel understandings. However, thriving on these inquiries demands various forms of leadership. I will address this more in chapter 8. However, before that, I will also discuss in more depth the co-constituting dynamics among paradoxical expectations, significant symbols, and Selves.

7.3.3 THE CO-CONSTITUTING DYNAMICS OF PARADOXICAL EXPECTATIONS, SIGNIFICANT SYMBOLS, AND SELVES

Can paradoxical expectations in some situations be a result of opposing obligations that participants must live up to, while in other situations be created by the participants to establish more leeway for taking action? This could be a plausible understanding because some of the paradoxical expectations appear to be rooted in expectations the participants experience in relation to "outside" communities. In other situations, the paradoxical expectations appeared to be constructed by participants to make room for otherwise impossible situations.

I propose another understanding of this, one where the experience of paradoxical expectations also influences the development of significant symbols and understanding of Selves and vice versa. For example, when the participants talked about themselves as "different" from other companies, this was to my understanding not something they strategically claimed to defend solutions that are out of the ordinary.

Rather, it appeared to be a heartfelt understanding of who they were in relation to others, based on their experiences. In addition, understanding themselves as different also implied that they had a reference, an understanding of "ordinary, usual, or normal" from which they differed. These expectations for the ordinary way of doing things were thus also something they carried with them, an understanding they had internalized.

It is plausible to understand the emergence of paradoxical expectations as rooted in the various understandings of Selves that must be handled simultaneously. However, is it so that the understandings of Selves are the causes and the paradoxical expectations the effects of the meaning developing? Could it not just as well be the other way around, so that the experience of paradoxical understandings leads to participants developing certain understandings of themselves and of the work tasks in form of significant symbols? It is more likely that, as Mead (1934) claimed, meaning-making and meaning-makers co-constitute one another. This would also explain why identity and tacit knowledge can only be developed by taking part in the work together with other participants in a group or community of practice. In other words, it is by taking on the attitude of others we develop relevant understandings of reality.

7.4 SUMMING UP AND MOVING FURTHER

Through the meaning-making in the NPD work, the participants related to several socially developed and internalized expectations. This theme was addressed in the previous chapter. In this chapter, I have addressed transactional situations where contradictory expectations emerged simultaneously as valid. I have called these situations paradoxical expectations.

Paradoxical expectations can be divided into four groups: between exploration and exploitation, between formal and informal, between conformity and conflict, and between tasks and relations. These four forms overlap to varying degrees. Common to them all is that they have

relational aspects. Paradoxical expectations between exploration and efficiency typically emerged in situations where the participants worked in line with the product strategy in developing either products for sale or products not for sale, but simultaneously expressed the possibility for an alternative outcome. The result was that they also widened the scope for both exploration and exploitation while still upholding some form of structure, goal directedness, and coordination of work.

Discrepancies between formal and informal expectations may have links to both task-related and more relational understandings. The formal descriptions of the NPD work could often be far from what the participants experienced in their everyday work. Still, they also related to these formal understandings. There were also more normative expectations in society at large that did not correspond to the expectations the participants had of how they should conduct themselves in the NPD work in the company.

Paradoxical expectations between conformity and conflict were connected to exploration and expectations, as conflict is a necessary part of any innovative work. Likewise, to enhance efficiency and exploitation, conformity is central. However, paradoxical expectations between conformity and conflict were also connected to the paradoxical expectations between tasks and identities, as it was due to the task-related work that conflict was necessary. To what extent and how to create productive conflicts was regulated by relational expectations.

Participants employed mainly three strategies to handle paradoxical expectations. The first was to handle one expectation at a time by "neutralizing" the other. This could be done, for example, by shifting between social plays and thus enabling the participants to fulfill the expectations in the situation. Humor was often used as a tool for shifting between social plays. The next strategy was to point out the breach with expectations without wanting to change the rules and thereby uphold double logics. The last strategy was likely not a strategy, but rather a necessary response to situations of inquiry. Because of an unexpected development of events, participants had to reconsider both their

understanding of reality and their understanding of themselves. This could in turn lead to the development of new solutions.

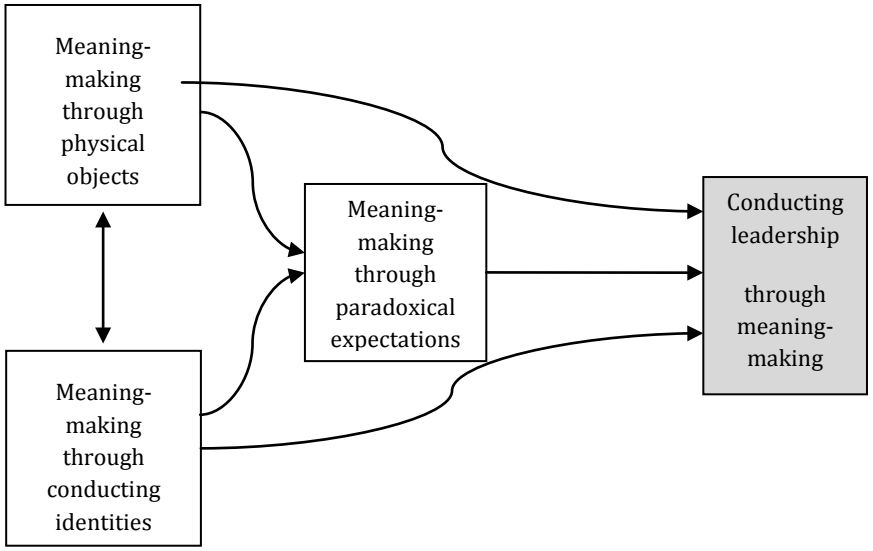
A plausible interpretation is that paradoxical expectations were not experienced because the participants had not developed clear understandings of what to do, but because they had internalized the numerous Me´s with respect to multiple relationships, communities, and stakeholders. It was thus their social competence and understanding of identity that enabled them to experience paradoxical expectations, but also what made them competent to assess the possibilities and to realize these possibilities in ways that related to the expectations of the environment. The relational understanding does to some extent connect to Brown and Duguid's (1991) understanding of canonical and non-canonical work, with some modifications. However, the participants will probably relate to several understandings, both canonical and non-canonical, simultaneously. Furthermore, they need to relate to both understandings to transact with both those relating to only the canonical understanding and those relating to both the non-canonical and the canonical understanding. The understanding of Selves as having several Me´s appears to capture this dynamic better than CoP theory.

Handling paradoxical expectations can be understood as a leadership task, as the ability to perform one's tasks and keep one's obligations in the work may be constrained if not handled properly. There can also be paradoxical expectations in relation to what form of leadership to conduct if the situation, for example, implies paradoxical tasks. Ways of handling both paradoxical tasks (Andriopolous & Lewis, 2010) and ways of handling the call for paradoxical leadership tasks (Uhl-Bien & Marion, 2009; Uhl-Bien et al., 2007) have been addressed in more overriding discussions. The findings from my study contribute insight into how leadership actually is conducted in NPD work.

Administrative, adaptive, and enabling leadership are all necessary leadership forms in NPD work. However, how can they be conducted in work processes where the separation between exploration and exploitation is almost absent, where products, processes, and projects are

intertwined, and when on top of this understandings of situations and identities are under continuous reinterpretation? The challenges of conducting leadership in NPD work are discussed in the next chapter.

8 CONDUCTING LEADERSHIP THROUGH MEANING-MAKING IN NPD WORK



The main research question in this thesis is: *How is leadership conducted through meaning-making in new product development (NPD) work?* In this thesis, leadership is about developing and directing meaning so as to move forward and providing the necessary factors to enable one-self and others to realize the work. Thus, it aligns with how Smircich and Morgan (1982) defined leadership. Numerous leadership acts are necessary to realize NPD work, as both exploration and exploitation are necessary to develop and realize the work so that the company can survive in both the short and long term. We can roughly categorize the various leadership tasks as being administrative, adaptive, and enabling (Uhl-Bien et al., 2007). However, although these forms of leadership are necessary to realize innovation work, they also often contradict one another, making it difficult to see how leadership can be conducted well. The dominant understanding in the innovation literature regarding how to solve this is to separate incremental and radical development work (Drach-Zahavy et

al., 2004; O´Connor & DeMartino, 2006) and to have different participants take care of different leadership tasks (Burgelman, 2002; Uhl-Bien & Marion, 2009). Findings from the fieldwork indicate that this normative understanding of how innovation work is led does not necessarily correlate well with reality, or at least tells just half the story.

In this chapter, I discuss how leadership conducted in relation to physical objects, identity, and paradoxical expectations can provide a more nuanced understanding of leadership in NPD work conducted in practice. Based on the relational approach, the focus is on the ways in which interdependence, situationality, and complexity are central to (a) how self-leadership and co-leadership are connected and conducted and (b) where leadership acts can take on administrative, adaptive, and enabling forms. I will also look at how a relational understanding of leadership connects to or contrasts with related theoretical and empirical research to contribute to a broader, more nuanced understanding of leadership in NPD work. I start by addressing the role of the physical object in meaning-making and the lessons learned for understanding how leadership is conducted in NPD work.

8.1 PHYSICAL OBJECTS AS TOOLS FOR CONDUCTING LEADERSHIP

Through the transactional understanding of Mead (1932, 1934) and Dewey (J. Aasen, 2006; Bale & Bø-Rygg, 2008; Brinkmann, 2006) and the understanding of power and interdependence found in Elias (1939), I will draw attention to the interdependent aspects of leadership, especially in relation to using physical objects as tools for conducting leadership. In chapter 5, I proposed that physical objects can be understood as gestures for others to respond to. Meaning is found by holding the gesture – the physical object – together with the response it evoked in others responding to it (Mead, 1934). An implication of this is that no one alone defines the meaning of the physical object. However, the responses can enable participants to develop or reconsider their expectations of how others will respond to further developments and thus adjust their acts. Both gestures and responses are guided by the internalization of significant symbols (ibid.). Thus, internalizing significant symbols

connected to the NPD work is an important aspect of enabling participants to take leadership initiatives. This also means that by influencing the significant symbols, one also influences the factors that guide meaning-making in the work. Leadership acts in NPD work can thus be about directing meaning through developing and reinterpreting significant symbols. It can also be about enabling oneself and others to provide competent responses to situations that can move the work forward. As pointed out in chapter 5, physical objects can be used intentionally for exploration and exploitation, but they can also lead to unexpected discoveries. In both situations, leadership is needed to bring the process forward. However, this can represent different modes of leadership initiative.

8.1.1 LEADERSHIP, PHYSICAL OBJECTS, AND INTENTIONALITY

In chapter 5, I described how physical objects such as product models, production tools, and existing products were actively used as tools for meaning-making. I will now address how meaning-making through physical objects was used to conduct both administrative and adaptive leadership, but where the ability to conduct this leadership was an interdependent activity in which several participants took part.

Product models can be used to define product solutions, demonstrate various functions, or provide a framework for how a certain product should be produced. Take, for example, the situation presented in 5.2.1, where the product developer presented a product model with the following comment: *"This is something of the most simplified and inexpensive we can make with isostat pressure method…."* Here, the product developer provides a visual understanding of what a product can be, but he also sets an agenda about developing products using isostat pressure and thus directs the criteria for the discussion. It is up to the others to take the idea further, to bring in thoughts about where cost-efficiency is central. Hence, physical objects can be used to set the agenda for a discussion and give the participants a clear idea of what the task is about. We can find parallels to this in stage-gate processes, as described by Cooper (1993), where references to existing product solutions are

central in defining new product solutions. However, Cooper (ibid.) used existing products more as blueprints or for defining various solutions. In the company, the intention in showing a product model was sometimes more about directing focus or defining the criteria for a new project than about the product model itself. However, for these discussions to be efficient, the participants need to have internalized the meaning of various types of products, projects, functions, and production methods so that the gesture – for example, the production tool – evokes more or less the same response in the respondents as it does in the person making the gesture. As this kind of meaning and knowledge is tacit knowledge embedded in significant symbols the participants have internalized, the meaning developing need not be identical in the minds of the participants. However, it is usually accurate enough to create a shared direction for further work. Cooper (1993) relied on explicit process descriptions and best practice procedures, but these do not capture the tacit knowledge that is required to make the development work efficient.

However, as long as participants are socialized into the work, they develop the tacit knowledge enabling them to "fill in the blanks" in the explicit descriptions. Cooper (1993) emphasized the need to use experts for the specific phases and tasks in the process, while Kleinsmann et al. (2007) pointed out that the use of experts in different phases, but not across phases, can lead to misunderstandings, as both terms and physical objects can have different understandings within different disciplines. Hence, to use physical objects as references for expressing a specific understanding, participants need to have developed shared significant symbols of how to understand the tasks across disciplines. Conducting administrative leadership by defining or directing meaning through physical objects thus depends on the respondents having developed the same interpretations of the physical object. The efficiency depends on the gesture-maker and the response-makers having compatible and complementary "passing and receiving skills" (Schou-Andreassen & Wadel, 1989). In other words, for example, to direct meaning around what a project should be with the use of a product model, the participants need to understand what meaning the product model carries in the given situation.

In the company, physical objects were also used to *explore meaning*, not just in relation to what a product could be, but also in exploring what projects could be. The development of product models is often seen as a task that should be postponed as long as possible as their production is often costly. The most cost-efficient way to develop products is thus to have the product thoroughly defined and assessed before product models and prototypes are developed (Cooper, 1993). Realizing that the product developers in the company often used product models to spur exploratory discussions of what could be was therefore an observation whose meaning it took me a long time to grasp. However, numerous observations from the field study indicate that product models were often used to explore meaning, rather than define meaning. For example, the designers described in sub-chapter 7.1 developed decorated products that radically contradicted what could be understood as functional for professional kitchens. This act can be understood as an adaptive leadership act where the designers challenged both the product strategy and the existing understandings of what is possible to sell. These products could enable the company to test the limits of what customers would accept as functional and to explore whether and what the market for more extreme products could be about.

This is an adaptive form of leadership where the product developer provides the tool for exploration, but where the others need to contribute with constructive input to this exploration. The product developer conducts a form of self-leadership in this exploration by providing himself or herself with necessary "material" to take the product model further. However, there is also a form of co-leadership in this as everyone must depend on the others to do their part of the tasks to make process work.

Explorations through physical objects with "insiders" were about exploring meaning with participants who had more or less shared understandings of significant symbols, such as the NPD strategy and what a "right product" could be. However, outsiders could also respond to, for example, existing products or product models. They could provide interpretations that were not directed by significant symbols. In addition,

"outsiders" could bring in themes and opinions that the "insiders" had not considered and thus initiate new directions in the transactions that could be fruitful for exploration. In his essay "The Stranger," Schuetz (1944) said that only those who have lost every illusion of reality can contribute something new. Others, the "insiders," will be guided by their developed understanding, making other interpretations impossible. These unexpected gestures made by "strangers" can lead to inquiries where the participants need to reconsider their understanding of reality (Dewey, 1938; Schuetz, 1944). However, the ability to make something out of the unexpected gesture depends on the response it evokes in the participants. It is thus not "the stranger" who "owns" the possibility for innovation, but through the unexpected gesture he or she can enable the participants to enlarge and reconsider their stock of experiences (Schuetz, 1944, p. 507) and thus imagine novel solutions. Bringing "strangers" into transactions is therefore good for enhancing the possibility for inquiry. However, it is what the unexpected gestures do to participants that are of interest. To make use of an unexpected response, participants must translate the response into "their reality." The response can be adjusted to this reality or used to question existing assumptions in novel ways. Making this translation is thus a form of enabling leadership as it bridges the gap between existing understandings of reality and a gesture contradicting the current understandings.

Cooper (1993) also emphasized the need for market research, but because he mainly based development work on improving existing product successes, the market research revolved around how people assess already existing solutions. However, some translation is needed as to what the market research can mean for novel solutions. Bohlmann et al. (2012) pointed out that to make use of market research in radical product development, it must be interpreted differently than in incremental product development. The exploratory products in the company made for purposes other than mass production and sale can be understood as gestures to use as tools for exploratory market research. Having actually realized these exploratory ideas in tangible objects made it possible for people to respond to them without further explanation.

The physical properties of the objects evoked responses without being directed by further definitions of usability or meaning.

I have now pointed out how physical objects can be used intentionally for directing shared meaning and for exploring the extent to which existing understandings can be challenged. Nevertheless, the extent to which one managed to direct the meaning, or the extent to which one could change existing understandings through challenging meanings, depended on the responses such gestures received. Sometimes, the agenda was not about directing or challenging meaning itself, but about raising the discussion of what could possibly be. These leadership initiatives can be understood as intentional; they reflect an agenda. However, meaning-making in the development processes could also develop in unexpected ways. To make use of these emerging, unintended discoveries, participants had to take spontaneous leadership initiative.

8.1.2 LEADERSHIP, PHYSICAL OBJECTS, AND EMERGENCE

The various NPD processes had an initial purpose of taking an exploitative or exploratory direction. However, during the development process, the purposes could change. The meaning-making could also lead to new initiatives in other projects or even new projects. To use possible emerging meanings, participants had to take adaptive leadership initiative. This leadership initiative was typically spurred by inquiries emerging as a result of unintended developments in events and hence took a more spontaneous form as a response to an unexpected realization. It is in situations of inquiry that the spontaneous I takes charge and acts without being guided by significant symbols or Me´s (Brinkmann, 2006; Elkjaer & Simpson, 2006).

It is not the inquiry itself that is the leadership task, as the inquiry only leads to a reconsideration of the situation and Selves. The leadership task is the active act of turning this reconsideration into something potentially fruitful. Take, for example, when customers described in sub-chapter 5.2.2 respond to the big whale at the trade fair by wanting to buy it. The leadership task here is to take the response back to the company,

gain acceptance for reclassifying it as a commercial product, and maybe the biggest hurdle, find ways to produce a product that until then had been impossible to produce. Several leadership acts are necessary to realize this leadership task. Just consider the process of getting the product into mass production; someone needs to convince participants in production about the importance of getting this product produced. However, it is usually someone else who must actually reconsider existing production methods, finding ways to produce the product. Redefining this product as a sellable and mass-produced product also led to reinterpretations of the limits of mass production.

Spontaneous leadership tasks initiated through inquiries are adaptive leadership tasks in that they are not consistent with the planned and expected development of events (Burgelman, 2002; Uhl-Bien & Marion, 2009). Nevertheless, these spontaneous leadership tasks can lead to both exploration and exploitation as output, and thus whether these spontaneous leadership acts are only adaptive can be disputed.

They are adaptive in that they are responses to a reinterpretation of the situation and thus related to an emerging understanding rather than the previous understanding. However, the spontaneous leadership act can lead to exploitation and efficiency in situations that were understood as exploratory, just as it can lead to exploration in areas that previously were seen as clear. Take, for example, the recycling project, described in sub-chapter 5.3. Realizing that the recycled clay mix cast faster than ordinary clay mix was an unexpected discovery. However, this discovery led to reconsideration of the way parts of the production were organized. Thus, this is an example of an unintended discovery that actually led to possibilities for enhanced efficiency, but where leadership initiative was needed. Such leadership initiative was conducted by connecting the discovery of shorter casting times to the challenge of capacity problems in production and to imagining how to solve this challenge with clay mixes other than the recycled mix. In other words, someone had to creatively imagine what such a discovery could mean for the organization of production and thus also how the new understanding could be taken forward. Leadership acts are necessary to make use of unintended

discoveries by exploring what the discoveries can imply for both exploratory and exploitative aspects.

Unintended discoveries can, if picked up, lead to products being redefined, developed into new product variances, or redirected in focus. Often such reconsiderations led to the initiation of other projects and products or a focus on new functions. A criterion for making better use of discoveries across projects and products was that more or less the same participants were involved in all the NPD work. They could thus relatively easily transfer meaning-making connected to one discovery to other tasks and projects. This is important because "adaptive" leadership initiatives in relation to unintended discoveries also depend on the co-leadership of others. For example, one participant could point out a possible opportunity, but the idea might need the further elaboration of other participants to test its potential. Such spontaneous leadership initiatives also must be legitimized as valid and important, without necessarily supporting the idea as such.[34]

The innovation literature has often distinguished between incremental innovation processes and radical innovation processes and between development and implementation, and these need different forms of leadership. Radical ideas and the development phase are seen as needing adaptive leadership, while incremental ideas and the implementation phase can be led with administrative leadership approaches (Burgelman, 2002; Lester & Piore, 2004; Uhl-Bien et al., 2007). The NPD work in the company developed across, in parallel, and subsequently in various products and projects. The development processes could take unexpected turns and develop into various side projects in relation to other tasks. The various development processes appeared to enrich one another in an invaluable way. This finding questions the idea that one can separate radical and incremental innovation work that some advocate (Büschgens, Bausch, & Balkin, 2013; O´Connor & DeMartino, 2006). An initially radical idea could develop into something relatively familiar. Likewise, what appeared to be a small change can lead to the discovery of unexpected

34 This is something I will discuss in more detail in sub-chapter 8.2.

possibilities. The source for both incremental and radical solutions lies in how and what meaning develops in the transactions. If the incremental and radical innovation projects are separated into separated work groups, the flow between incremental and radical development in direction will very possibly be inhibited. First and foremost, by separating the two "forms" of innovation, the participants will have normative expectations as to what is acceptable for them to suggest. Second, for example, an incremental idea that entails possibilities for radical developments is difficult to transfer from one group to another since the meaning is not easily transferred from one transaction to another. Having the possibility of taking ideas in both incremental and radical directions – across projects and initial intentions – in the same group of participants is thus imperative to enhance both exploration and exploitation.

Physical objects can be tools for developing meaning, but to direct this meaning into something useful and profitable, or something that widens the scope of what it is possible to do, several participants need to conduct leadership. To take an unintended discovery forward, a participant must depend on the cooperation of others where they need to use their special competence to realize the idea. This enables participants to creatively imagine what could possibly be, often beyond their own discipline and competence. The fact that participants cooperated across projects and processes might have been a central reason for why discussions went across projects rather than only within projects. This might also be an important reason why the participants had so much insight and competence about the various projects, goals, and interpretations of strategies. This also made them capable of conducting leadership through meaning-making on one another's turf. In other words, by having insight into one another's work, they could suggest solutions and point out possible challenges, enabling the others to explore the meaning further. I have now focused on how both adaptive and administrative leadership could be initiated and conducted by using physical objects as tools for exploring and directing meaning. However, the extent to which there is room to take leadership initiatives in the specific situation depends highly on what others can accept in the situation. The development and

conducting of identity is central to being able to take leadership initiative and thereby empower one-self and others to do their work.

8.2 IDENTITY AS GUIDANCE AND LEGITIMATION FOR LEADERSHIP ACTS

In tandem with leadership acts conducted in relation to physical objects, leadership acts related to conducting identity also involve empowering oneself and others to act in accordance with expectations to enable other work tasks. The conducting of identity can – if not adjusted to the situation – inhibit the ability to perform the work. On the other hand, the development and conducting of identity can also enable participants to conduct acts that might otherwise not be possible. I will now address how identity can be understood as guidance for taking leadership responsibility and legitimation for such action and that this can be highly situational. In situations of paradoxical expectations this might be easier to observe.

Transactions often need several leadership acts to conduct a leadership task. For example, to define an NPD project there might be a need for someone to direct the discussion by providing a product model, generate alternative approaches, draw parallels to other projects, and provide market input and ideas for how to produce the products. In addition, the participants need to conduct themselves in ways that enable them to conduct their task-related leadership acts. It is thus not surprising that several and paradoxical expectations can exist regarding what to do next in the transactions. In such situations, enabling leadership is necessary (Uhl- Bien et al., 2007).

8.2.1 LEADERSHIP, SITUATIONALITY AND COMPLEXITY

We can see in the situation with the internal product launch, described in Chapter 7 (7.1), the complexity and nuances in how various forms of leadership are conducted in "ordinary work." The designer together with the standard décor team conducted adaptive leadership by challenging the definitions of what a standard product could be and what others

could accept. In addition, during product council meetings, its members must have conducted enabling leadership *by not stopping* the products, although they were not consistent with the strategy and criteria for such products. The area manager from production spontaneously conducted administrative leadership by upholding the strategy and pointing out the discrepancies between the products and the strategy. Several participants took leadership initiative in the situation and did so over time. Both administrative and enabling leadership are forms of responses to the adaptive leadership acts of others. The product council had not asked for such extreme products that the designers came up with, although it wanted challenging products for the project. However, when the products first were presented, the product council had to decide whether to let the products through or not. In other words, council members did not decide what products the designers would present, but they did control their response to the gesture. Likewise, the area manager had probably not come to the presentation with the intent of criticizing the products, but when she felt that the decision was wrong, she saw it as her obligation to speak up.

The leadership acts conducted here are intentional, performed to direct the further development of meaning. However, intention can emerge in the situation as a response to an upcoming situation where the participant sees the need for someone to conduct administrative leadership by upholding the strategy. Also, as no one else appeared to take the task, the area manager conducted the leadership necessary. This was a spontaneous act, spurred by the inquiry caused by two differing logics colliding, the NPD strategy and the product solutions presented.

In this situation, participants took different leadership tasks and acts in a situation where two paradoxical logics were upheld: the NPD strategy as a guide for how products were expected to be and the right and need to constantly question current understandings of what could be. Thus, this example illustrates how the innovation dilemma was handled in practice in the company. Who conducted what leadership act depended on how the situation developed. In this example, the participants taking leadership initiative were socialized into the culture and identity of the

company, and this is likely to have influenced why they saw these acts as possible and right to conduct. We can imagine other outcomes of the situation if the designer had only followed the guidelines in the NPD strategy. Furthermore, the product council could easily have stopped the products based on the NPD strategy. Third, the area manager could just have followed the product presentation without protesting the product solutions. The point being made here is that the leadership tasks being conducted could easily have been different, but because participants took leadership agency in the emerging situation two paradoxical logics of action were being upheld in the same development process. Who took what kind of leadership and when was situational, rather than planned.

The ability to take leadership in the specific situation was probably more rooted in who the participants understood themselves to become in the situation, rather than rooted in formal positions. In other words, as other participants took adaptive leadership initiatives, someone needed to conduct administrative leadership to direct and control that the decisions were thought-through. Likewise someone also needed to bridge the gap between contradicting expectations and acts for them to be upheld. In order to do so the participants needed to be able to see themselves capable and legitimized in taking on the various leadership acts needed in the situation. This both depended on who they understood themselves to be in the transaction more generally, but also on who they could become in the situation, based on the development of events.

The reason for characterizing these examples as situational is based in how the NPD work appeared to be conducted. The NPD strategy describes the various products and projects as having different characteristics and purposes. This strategy directed and structured the expectations for what and how the NPD work should be conducted. However, in these relatively structured processes, unexpected meanings could develop across projects, products, and time. These upcoming possibilities were not readily developed. They were rather alternative understandings that could be pursued, given that someone paid attention to them and found possibilities to pursue them. However, this meant that someone needed to take leadership initiative, and this could in principle

be done by anyone. Thus, the NPD work consisted of both the systematic development of products consistent with the NPD strategy and the more spontaneous pursuit of possibilities for exploration or exploitation across projects and tasks.

We can imagine several understandings of how and why there were paradoxical expectations as to how to act and conduct leadership in the NPD work. Brown and Duguid (1991) described how work routines can have both a canonical understanding and a non-canonical understanding, where the formal leaders only have insight into the canonical understanding of formal descriptions and procedures. In contrast, the workers are familiar with both the canonical understanding and the non-canonical understanding. Although there were both formal and informal understandings of how the NPD work was conducted in the company, it was not so that the formal leaders did not have insight into both the canonical and the non-canonical work. Rather, the experienced participants had the most insight into both the formal and informal understandings, and these were typically experienced through the internalizing of different Me´s. The participants in the NPD work I followed consisted of formal leaders and "ordinary" employees, and one could not necessarily divide their insight into formal and informal understandings based on their position.

Karp and Helgø (2009) and DeRue and Ashford (2010) both recognize that leadership is not connected to formal leaders alone, but tasks that anyone can take on. They do also connect leadership to the development of identities, but here in a form of ongoing negotiations between leaders and followers where the leaders and the followers can change over time. Although also Karp and Helgø (ibid.) refer to the work of Mead (1934), their understanding of relational interdependence and identity appears to be too stable. Mead (ibid.) emphasized the possibility for both stability and change in any situation. This means that while we direct and control our response to the emerging events, we do not control the response our own gestures will evoke in others. However, we can – by the way we conduct ourselves and how we perform the gestures – have expectations to how others will respond to our actions.

Before addressing the understanding of leadership in innovation work more generally, I will address the three strategies for handling paradoxical expectations, and what this can mean in terms of leadership.

8.2.2 *ENABLING LEADERSHIP THROUGH CO-LEADERSHIP AND SELF-LEADERSHIP*

Uhl-Bien et al. (2007) saw enabling leadership as facilitating adaptive leadership to be conducted in a bureaucratic system characterized by administrative leadership and securing output in adaptive processes. Hence, by drawing on Mead (1934), we can say that socializing newcomers into the NPD work is about making participants able to conduct both administrative and adaptive leadership. Developing identity in relation to a group is then about enabling oneself to conduct leadership acts in the group. As the leadership acts mainly are conducted in response to the meaning emerging in the transactions and the gestures of others in these transactions, they are typically conducted more through a gut feeling of what is right to do than as considered acts planned in advance. Identity is thus vital for conducting self-leadership and co-leadership in the NPD work.

According to Wadel, self-leadership with other participants demands not just the ability to observe what others are doing, but also the ability to adjust one´s own behavior to others' behavior. Thus, self-leadership together with and adjusted to one another can be understood as self-leadership in co-leadership.

To my understanding, there is no division between self-leadership on one´s own and self-leadership together with others. There will be a need for both self-leadership and co-leadership in almost any situation. We are never completely "alone," decoupled from the relations that connect us to others. A part of ourselves is always connected to various others through our Me´s. Thus, when we conduct some kind of task, we take on the attitude of the persons related to that task to the extent that we have internalized an understanding of what we are to them and they are to us. Take the example of the designer, mentioned in sub-chapter 6.3, being

careful when writing the instructions for how to place the decor on the products so that the less experienced decorators understood how to do it correctly, but simultaneously not explaining how to do it in too much detail in case the decorator assigned to the task was highly experienced and thus could take the instructions as an underestimation of his or her skills. We could say that the work task here is to write the instructions, but the designer understands that there is also a relational aspect. She needs to show both respect and regard for the competence of the experienced decorators, while at the same time enabling the less experienced to do their work as accurately as possible by ensuring that they have all necessary information. Here the designer performs a routine work task. However, to uphold not just good relations but also the identity of the experienced decorators as competent participants, she also had to perform relational leadership. It is through the ability to take on the attitude of the experienced decorators as well as those with less experience that she actually was able not just to formulate the description, but also to understand that this relational work needed doing. However, for these small, but significant everyday tasks to function well, the decorators also need to conduct both self-leadership and co-leadership in "taking the instruction the right way".

Enabling leadership is about bridging the gap between other leadership tasks that are necessary, but also contradictive. Hence, enabling leadership can be about adjusting and defining the meaning in the situation in such a way that it is possible – both practically and relationally – to conduct contradicting leadership tasks simultaneously.

Mainly three strategies for how to handle paradoxical expectations were found. The first was to shift between social plays in the situation, the second was to let breaches pass by simultaneously upholding the rules, and the third was to uphold and perform double logics. All three of these strategies were connected to identity and the handling of relational obligations.

The strategy of changing between social plays was usually used in situations where the participants could have difficulty in performing

their work tasks because of norms and conventions for what someone in their position should do. For example, the product developers and designers were socialized into the norms of making something functionally good, profitable, and successful in the market and probably had also internalized norms for what that could be. This also meant that it was difficult for them to make something that broke with these norms. Having the task of making something not for sale and not for mass production provided room for not following the norms for what a good product ordinarily was. In this sense, the product strategy itself was a form of shifting between plays. In relation to what Uhl-Bien and Marion (2009) said about enabling leadership, this is about protecting adaptive initiatives through the administrative system and (in adaptive organizations) turning adaptive ideas into something that can be taken to market. In the company, the strategy was a central part of administrative leadership, but also one of the tools for conducting enabling leadership. Hence, the formal product strategy was also used as a tool to uphold relational expectations in identity performance by making task-related exceptions for living up to the expectations of being a "professional designer." However, although the strategy also gave room for conducting differing social plays, the participants needed to conduct both self-leadership and co-leadership in order to adjust to the shifts between plays. Adjusting own performance of work-tasks also influenced on the ability of the other participants in the transactions to conduct their tasks.

The most usual form of shifts between social plays involved situations where the transactions in some way became rigid or appeared to derail. These situations could occur if someone were offended by critical comments or other meddling with their work tasks beyond what they saw as reasonable. A participant conducting an adaptive leadership task in conflict with the NPD-strategy might need another participant to justify this act by legitimizing it through a re-definition of the situation. Thus, the response the adaptive leadership act evoked in the other participant defined the validity and impact of the adaptive leadership act. As such the participants needed to conduct co-leadership. Simultaneously the participants needed to conduct self-leadership, sometimes responding to the gestures in ways that contradicted their own wills, in

order to enable the leadership initiative of others. Take for example the situation in the market council[35]. In this situation other participants in the market council criticized the solution chosen for the brochure-lay-out. This was not well received by some of the participants in the project group. However, one of them chose another response to the critique, upholding self-presentation as a professional through using humor and self-irony to mark role distance. As such she conducted self-leadership, navigating the meaning into a track where it was possible to get the discussion back on focusing on what the brochure should look like. However, in order to do so she needed a confirmation from other participants for this to be a legitimate interpretation. And this confirmation she got from the one voicing the critique, following up on the humor, and thereby confirming that this was the right way to take it. Here the use of humor enabled the participants to choose another interpretation of the situation and thus get on with the work while still having their integrity intact.

The strategy of upholding double logics also often involved the use of humor in the sense of suggesting something as a joke while still making the suggestion. Double logics can be understood as an offer, a gesture for someone to respond to where least two different meanings are suggested. As such it was a creation of paradoxical expectations, in addition to a way of handling these expectations. Hence, it can be understood as a leadership initiative made by someone for others to respond to and take further. Double logics gave the participants both direction and freedom to take adaptive action while still adhering to shared understandings of reality. However, in conducting double logics, one needs to have an understanding of whether the others in the situation would and could accept the double logics. This meant that the participants needed insight into the situation and who they and others could become in the situation. Handling double logics the wrong way can lead to that one is seen as less competent, and this would again influence who one becomes in the situation.

35 See sub-chapter 7.2.4. for further description.

The third bridging strategy for handling paradoxical expectations was to uphold the contradictions and live with them, in the sense that they were not dismissed, but upheld as facts of the situation. The participants could have an understanding of the rules of conduct and the procedures and still accept and even legitimize the breaking of these rules. However, to do this successfully, they needed to have internalized an understanding of what there could be acceptance for in the situation.

In order for participants to conduct both self-leadership and co-leadership in situations of paradoxical expectations, they needed to have internalized the attitude of others towards themselves, including both specific others and related groups and communities more in general. They also needed to have insight in both the work tasks and tacit knowledge across disciplines and Communities of Practice. Nevertheless, although participants needed to have both this task-related and relational competence, there is also the aspect of power present. Seeing any leadership initiative as a gesture where the outcome of the gesture is dependent of the response it evokes in others, participants will always have the ability to decline the gesture or respond in a way that changes the intended meaning of the gesture. Having developed shared goals can guide meaning-making and the responses prospective gestures can evoke, but the participants will always have their free will in the situations. Uhl-Bien and Graen (1992) claimed that in order for participants to contribute to the shared goals of the team, the participants needed to abandon their individual goals for the sake of the team. Based on a relational approach it becomes difficult to divide between the individual and the social as both are aspects of any participant.

Uhl-Bien and Marion (2009) saw enabling leadership as the bridging between the administrative system and the adaptive system, where the first represents the formal, stable, and predictable while the latter represents the informal, chaotic, and challenging aspects of development work. This understanding resonates poorly with my experiences from the fieldwork. The problem might be expressed in use of the term “systems.”

While Uhl-Bien and Marion (2009) focused on systems, my findings indicate that these leadership forms could be required in any situation and that understandings of this are better found in the dynamics of sociality than in systems thinking. The mental models for the reasoning of participants, their more or less shared understandings of reality, and their understanding of who they are were embedded in both administrative and adaptive aspects of the work. At any time in the transactions, the mood could change, a good idea could turn bad, or an apparently less important detail could come to have a significant impact due to a reinterpretation of the situation. However, things could also turn out as expected. We can say that the participants, by having internalized an understanding of the company, reality, and themselves in relation to others, embodied the administrative, adaptive, and relational norms, expectations, and possibilities, and these were realized through transactions.

Enabling leadership as handling paradoxical expectations involved handling colliding expectations not just between administrative and adaptive leadership, but also between task-related and relational leadership. I have discussed how these various leadership forms were highly responsive to the situations emerging. The discrepancies between differing expectations were not between different persons and/or different systems, but between different expectations connected to various obligations within and between each individual as part of numerous relationships, groups, and communities. Having the ability to adjust and imagine what others can adjust to could open up creative possibilities that might not be so obvious. Especially situations characterized by inquiries could lead to unexpected possibilities, not just in relation to what they could do, but also in relation to who they could become in the moment. The situation could change abruptly, and the participants had to reinterpret not just who they themselves became, but also who others became in the situation and, furthermore, how this also led to reconsidered expectations of the future.

8.3 LESSONS LEARNED ABOUT CONDUCTING LEADERSHIP THROUGH MEANING-MAKING IN NPD WORK

In this sub-chapter I address the challenge sketched up as the main problem in leading innovation-processes, namely the need for securing both exploration and exploitation. Based in the findings and discussion I have presented I will now connect this to the main strategies expressed in innovation literature for how to handle the innovation dilemma.

The overriding focus in this thesis has developed into: *How is leadership conducted through meaning-making in NPD work?* Taking the need for both administrative and adaptive leadership in NPD work as a point of departure (Drach-Zahavy et al., 2004; O´Connor & DeMartino, 2006) and the need to handle paradoxical leadership tasks as a result of this (Putz & Raynor, 2005; Uhl-Bien & Marion, 2009; Uhl-Bien et al., 2007), based on the findings presented earlier in the thesis, I will argue for a different understanding of how leadership tasks are resolved. The argument is that rather than seeing the need for different leadership forms as something that can be dealt with through organizing, in space, time or by giving different persons different leadership tasks, findings from this study indicate that these leadership forms are often addressed by various participants in the specific transaction. Which of the participants must take what leadership initiative depends on how the situation evolves and the meaning developing. The ability to take leadership initiative will also depend on who the participants understand themselves to be in the situation, and thus what part they can take in the conducting of leadership. A relational approach can be a better tool for exploring and explaining why this is so.

The NPD work in the company was organized around developing product solutions that were exploitative (standard product range) and exploratory (front products and products not for sale). However, although the NPD strategy ensured that both exploratory and exploitative projects were prioritized and legitimized, the division between exploration and exploitation was not as clear as it might appear to be in the NPD strategy and as emphasized in the innovation literature (Drach-

Zahavy et al., 2004; O´Connor & DeMartino, 2006). Any development project could develop in a direction different than intended at the outset. Even more imperative for understanding the ambiguity between exploration and exploitation might be that numerous development projects were conducted in parallel, across, and after one another. More or less the same participants were involved in all projects and product solutions. Hence, meaning-making developed across projects and products. Ideas or challenges in relation to one product could initiate another project. A new project could lead to further development of a product that was initially intended for a completely different purpose. Based on these findings, I argue that the meaning-making in the NPD work was nourished through the numerous NPD projects developed by the same participants in parallel, across, and after one another. Separating exploitative and exploratory NPD work by locating different groups' work spaces far from one another would likely inhibit this ability to draw on the numerous meanings developed across projects and processes. There can be at least two possible reasons for this. First, participants would lose the broader insight into developments outside their own work group and thereby be less capable of drawing parallels and making suggestions and alterations across projects and processes. Second, over time, an understanding of treating NPD work as parallel processes that are secluded from one another might evolve.

To use meaning-making across development processes, active leadership initiative must be undertaken. No one, including formal leaders, can prescribe what outcome and consequences a development process could have at the outset of the project. Numerous interpretations of the situation and what alternative prospective acts this could lead to were possible in any transaction. However, to make use of an idea, someone had to draw attention to it and provide an interpretation that the others could use. How the others would use it or respond to it was up to the respondents (Mead, 1934). Drawing attention to emerging possibilities beyond the planned intentions could sometimes be a form of administrative leadership act, other times a form of adaptive leadership act. Administrative leadership acts could, for example, mean pointing out a possibility to turn an exploratory project into something profitable by

making adjustments or pointing out a possibility for very quickly taking an exploratory idea into a new market. It could also mean prioritizing or providing the necessary resources to explore an upcoming possibility someone points out. Administrative leadership acts were typically necessary to enable a leadership initiative for exploration to be taken further. Likewise, adaptive leadership acts were necessary to question "too much" agreement and focus on short-term profitability. However, both forms were needed in the same transactions, as any NPD projects entailed both exploitative and exploratory possibilities, regardless of the main intentions. Hence, the idea of having more adaptive leadership in the "development phase" and more administrative leadership in the implementation phase (Uhl-Bien & Marion, 2009) is not supported by my findings, as both forms of leadership were needed in any situation where alternative possibilities for interpretation emerged. Also, in the implementation phase, in the process of producing and taking the developed product to market, unexpected events could occur and thus draw attention to other possibilities. However, someone had to address these alternative possibilities to make use of the discovery. Faults, mistakes, and misunderstandings thus do not create innovation in themselves. Someone needs to pick up on the development of events and provide direction for action.

Hence, both administrative and adaptive leadership were necessary in the NPD work to use the potential possibilities that emerged in the transactions. This meant that several participants had to conduct different leadership tasks simultaneously. So, although there was much freedom to take leadership initiative, the kind of leadership initiative needed was not just directed by the will of the specific participant conducting the act, but also by what the situation required. This implies conducting administrative leadership when direction, organization, and reality-checking were necessary, while using adaptive leadership in situations when the discussion became too narrow or too focused on short-term profitability or when too few critical questions were posed regarding the solutions found.

Physical objects such as design layouts, product models, already developed products, production tools, and production forms can be tools for conducting both administrative and adaptive leadership. They can be used to demonstrate possibilities, to define solutions, and to communicate solutions across projects and over time. This indicates the role and value of physical objects such as products produced not just for their profit potential, but also for their function in developing other products and projects. This aspect appears to be under-communicated in the innovation literature.

Although this gave the participants freedom to take the initiative and influence the development of events, it also demanded very competent and capable participants. For example, to conduct administrative leadership, the participants had to have internalized goals, strategies, and work processes. Furthermore, they needed insight into cost frames, profitability calculations, production methods, market preferences, production methods, and work routines. Ultimately, they had to have a strong focus on economic conditions and short-term survival.

We might think that adaptive leadership can be conducted without having much insight into strategies, work tasks, and procedures. Leaning on the work of Brinkmann and Tanggard (2010) and Dewey (Bale & Bø-Rygg, 2008), we can also claim the opposite, namely, that it is through having thorough experience and insight into the work that one is able to act creatively in relation to the work. Through knowing the work-tasks, materials and processes thoroughly, participants have developed strong expectations to how various acts will influence the outcome. And it is through being surprised by unexpected outcomes that one can act creatively. Newcomers or "outsiders" can provide interpretations that are free of the normative habits and constraints the experienced participants have internalized through their work. However, to conduct adaptive leadership, the one conducting it needs to have thorough insight into the work, as adaptive leadership is also about directing the work toward survival in a long-term perspective. To do so, one needs to have both a thorough understanding of the current goals, strategies, economic frames, and production possibilities and a critical attitude about whether

these understandings will be valid in the future or in need of reinterpretation.

Hence, to conduct both administrative and adaptive leadership, the participants had to have internalized an understanding of the NPD work, how it is conducted, the production methods and processes, the goals and strategies, and the kind of products that are seen as "right" and "wrong." These understandings are internalized through the numerous significant symbols that structure, guide, and coordinate acts and tasks in the work (Mead, 1934). These significant symbols will also contribute to developing the identity of the participants as part of the NPD work. By being socialized into the NPD work, the participants develop an understanding of who they can be in this work and what others expect of them. This is what Mead (1934) called taking the attitude of the generalized other toward themselves. This means that participants can act meaningfully in transactions with one another, acting intentionally but without controlling the outcome of their acts.

8.4 SUMMING UP

Although there were plans and processes for how to conduct the NPD-work, and products and projects had more or less clear intentions at the outset, the most important output of the work could be the alternative, never-sought-after opportunities that developed underway. However, to make use of these opportunities, several participants had to cooperate in conducting leadership to make it possible to handle the paradoxical expectations emerging from differing leadership-tasks and even to thrive on them.

In order for participants to cooperate in conducting leadership, they needed insight in the various work-tasks the NPD-work consisted of, far beyond their own discipline and tasks. This also implies internalizing an understanding of how others understood the tasks and who they could be in relation to others in the work.

However, as it was not given who had to take what kind of leadership task in the situation it was often necessary with some re-defining of the situation and who participants could be in the situation. Such relational enabling was necessary in order to legitimize and validate the leadership initiative. However, this also meant that other participants through their responses to a leadership act could weaken or re-define its meaning, and thus also the participant making the leadership-initiative in the first place.

Summed up; in order to conduct leadership in NPD-work the participants needed to cooperate in realizing the leadership tasks. This demanded both task-related competence and to be able to take the attitude of others onto prospective leadership-acts. It also sometimes demanded the ability to put own agendas and wills on hold for enabling the acts of others. However, any participant could also dismiss or change the meaning of a leadership initiative through his response to it. As such, power will always be embedded in the gestures and responses made in the transactions.

9 CONCLUSION

The main aim in this study has been to contribute to a more comprehensive empirical understanding of innovation work by drawing attention to the "hidden work" imperative for bringing the development processes forward. By focusing on the relational aspects of the new product development (NPD) work in a company with special attention to how the work tasks were conducted, and exploring possible interpretations of why they were conducted as they were, three themes emerged as central through the fieldwork: physical objects, identities, and paradoxical expectations playing a part in bringing the processes forward. The main research problem developed into how leadership is conducted through meaning-making in NPD work. By drawing on the findings related to the three research questions, an answer to the research problem is given before possible contributions, implications, and suggestions for further studies are pointed out.

9.1 ADDRESSING THE RESEARCH PROBLEM THROUGH THE RESEARCH QUESTIONS

Having followed the NPD work in a company closely over several years, what are the lessons learned from the fieldwork? The short answer is that NPD work is both far more complicated and far more straightforward than I expected it to be. It is complicated because the various projects and products under development were intertwined with one another in already developed products and in prospective products and projects that were merely ideas at the time. It is straightforward because there were no secret recipes for how to develop successful products, only more or less ambiguous ideas that materialized into product models to be given some meaning in connection to the rest of the work. In other words, the work was less about defining what to make based on accurate market analysis and profitability measures and more about the process of experiencing what a product, product solution, or project could be about through transacting around it.

The NPD work in the company can be characterized as a stream of numerous product and project developments where meaning-making developed across, in parallel, and built on previous processes and existing products. Thus, this study does not capture meaning-making in any single process from A to Z. It captures how the meaning-making was informed by and developed between the numerous undertaken tasks, products, and projects.

Although the participants taking part in the work belonged to some formal areas or disciplines and had responsibility for certain tasks, they were also expected to take initiatives beyond their own areas. They were of course expected to bring in possibly relevant information, point out possible hurdles and opportunities, and represent the prospective views of the market, production, and suppliers to the discussions. Additionally, they were also expected to challenge one another´s ideas, information and views, way beyond their own turfs. As a consequence participants needed to have thorough insight in the work beyond their own tasks and discipline. Also, they needed to find ways of coping with the interference of others and ways of conducting themselves in order to make others cope with their own interferences.

These two contextual characteristics of what NPD work was and how it was organized and conducted are central for better comprehending how physical objects, identities, and paradoxical expectations played a part in the meaning-making. Three research questions were addressed:

1. *How do physical objects play a part in meaning-making in NPD work?*

In contrast to what is usually seen as the right way to develop products to reduce risk and costs, product models were often developed in the company long before they were defined. The probable reason for this was that the product model was first and foremost a gesture from the product developers to the other participants to respond to. Thus, it was a tool, not just for finding out what the product should be, but also for expressing and discussing expectations of various projects and related processes.

Making improved or alternative versions of existing products is usually defined as incremental innovation. However, when incremental innovation is focused on in NPD-literature it is usually understood as a refinement or improvement of an existing product, also in its meaning. In the company, there were numerous examples of incremental product-innovations, such as a bigger version of a plate, or a lighter version of a plate. The product-meaning in itself could be incremental. Moreover, there were also several examples of existing products were radically reinterpreted, leading to "new products" and product solutions without changing the physical properties of the product. These products had several times led to radical re-interpretations of production-possibilities, of possible functions of the physical properties of products, and also to new conversations both within the work-community and with "outsiders" drawing attention to emerging needs.

The most important lesson learned in relation to the role of physical objects for meaning making in NPD-work is that the reasons for developing a new product could be diverse, many-folded and often be rooted more in needs connected to other products, projects or the overall need for exploration than in the expectations for profitability for the product itself. As a consequence, the profitability of a product or project can be difficult to measure, or at least it often has to be measured in relation to several aspects.

2. *How does identity play a part in meaning-making in NPD work?*

Strong norms developed for how participants were expected to conduct themselves in various situations and in interaction with various individuals, groups, and communities. The findings indicate that the ability to use the physical objects as tools for meaning-making was highly dependent on participants conducting themselves in accordance with these norms, usually realized through social plays. The development of these norms also influenced who the participants understood themselves to be and become in various situations and relationships. Although norms and internalized identities contributed to align the acts of participants with the expectations, they also represented constraints for what participants could and should do. Thus, to enable one another to explore

alternative understandings in the NPD work, relational work, for example, through reinterpreting identities, had to be conducted. This relational work could be understood as the "hidden work" in innovation-literature being only marginally touched upon. We can find parallels in the Communities of Practice literature, here named tacit knowledge, but just what it is and how it is conducted in the work is to lesser extent specified. In this study relational work is understood as the relational tasks of upholding and re-interpreting identities in ways that enable the group to move forward, and conducting respectful acts is seen as a vital part of this. The findings demonstrate that the ability to conduct the work tasks highly depended on both the ability to align with the norms for conducting identity in the work and simultaneously the ability to reinterpret situations and identities for realizing otherwise constrained situations.

3. *How do paradoxical expectations play a part in meaning-making in NPD work?*

Participants often expressed paradoxical expectations as to both how events were expected to develop and who they could be in this work. The innovation dilemma where a long-term solution necessarily is destructive to current competence and solutions was one form of paradox, here called the paradoxical expectations between exploration and exploitation. However, in addition to this paradox, paradoxical expectations existed between formal and informal expectations, between conformity and conflict, and between task-related aspects and relational aspects. Paradoxical expectations could easily constrain the ability to conduct the work as participants tried to adhere to both expectations simultaneously. On the other hand, as paradoxical expectations also can lead to a form of inquiry, it could provide room for re-interpretations making previously "impossible" solutions appear reasonable.

I found that participants handled the paradoxical expectations through mainly three strategies. First, by the way they conducted themselves they could weaken or eliminate one of the expectations in the situation and thereby enable themselves to handle the other expectation. Second, they could express and live with simultaneously contradicting expectations as

a form of "double logics" without trying to eliminate one or the other. Third, they could express paradoxical expectations as a form of offer for someone to respond to and thereby create situations where participants could free themselves from constraining norms regarding how to conduct the work. For the group to make use of such offers, it depended on someone accepting the the "offer" as valid and possible to imagine, considering who they were and possibly could become.

These findings came to be the basis for addressing how leadership was conducted through meaning-making in NPD work.

9.1.1 ADDRESSING THE MAIN RESEARCH PROBLEM

This thesis has explored how leadership is conducted in NPD work through the ongoing processes of developing meaning, and this meaning-making develops in a relational context. Physical objects can be tools for both directing administrative leadership and conducting adaptive leadership. Products in the NPD-work could sometimes be more valuable as tools for developing other projects and products than for their own profitability potential. They could also be used for conducting adaptive leadership through making products challenging both NPD-strategy and the way the work-tasks were organized. Hence, through developing specific products, designers and product-developers could raise agendas and challenge the limits for what could be accepted as valid solutions. Nonetheless, the participants responding to the products also had leadership influence by accepting the challenging solutions and/or pointing out its implications for strategy, market-offer or production, or they could reject it. In order to conduct leadership by the use of product-models etc, the participants needed to have sufficient insight in the various elements and tasks the work consisted of, and in strategies, economic issues etc. in order to imagine possible implications of the product-suggestions.

It might be plausible to think that product-developers and designers alone have the initiative in conducting adaptive leadership by the help of product-models. However, just because the product-models exist as

physical objects, not just abstract ideas in the mind of the product-developers and other participants, anyone can in principle make use of the models for challenging existing understandings.

The conducting of leadership in NPD work is guided by norms, significant symbols, and the ability to take on the attitude of the generalized other in transactions. This implies that the conducting of leadership is interdependent, demanding participants to cooperate in the leadership through complementary leadership acts. Socializing newcomers to the work and communities is central for the ability of participants to conduct both self-leadership and co-leadership in the work. Hence, it is not possible to understand why participants in NPD work act as they do without taking the aspect of identity into account, as this can both enable and constrain the ability to act.

A fourth point is that although some normative directions enable participants to understand and coordinate the work, there is always the possibility for alternative understandings to develop. These can be valuable, but they necessitate that someone act on them. This also means that to act upon the potential possibilities participants need to have leadership agency so that they draw attention to the possibilities they see. Whether this leads to anything depends on how others respond to the initiative and thus what possible meaning develops. This also means that the need to conduct leadership is situational where the participants must adjust to one another, assuming the role that appears to be necessary in the situation. They need legitimacy to do so, and this means developing identity in relation to – and insight into – the NPD work.

Paradoxical expectations are natural consequences of a reality where both stability and change can be possible outcomes of any situation. If these paradoxical expectations are handled, the NPD work can benefit from transactions where both meaning and meaning-makers are reinterpreted.

By focusing on leadership through meaning-making in relation to physical objects, identities, and paradoxical expectations, I have aimed to

show the interdependent, situational, and complex aspects of NPD work where identity and the process of becoming are central.

In order to conduct leadership through meaning making in NPD-work there are two (dynamic) conditions that are central. The first condition is the competence related to having insight in the NPD-strategy, budget aspects and calculations, market preferences and in the various work-tasks and understandings of the work-tasks and their implications, understood through various disciplines.

The second condition is the relational ability to conduct the leadership acts necessary to realize leadership tasks in transaction with others. This is about enabling oneself and/or others to come into a position where what appears to be fruitful for the further development of events is also relationally legitimate and accepted as valid acts.

Both these conditions are necessary for conducting leadership characterized by interdependence, situationality and complexity and where interfering in other´s decisions, work-tasks and disciplines are not bad habits, but imperative for both exploring and exploiting possibilities emerging in NPD-work.

Economic resources, time, market conditions, technology and physical properties of products, equipment and markets can be understood as rational entities having both possibilities and constrains. Findings from this study indicate that the meaning and impact in terms of possibilities and constrains are at least not stable nor determined entities. Their influence and meaning is realized through the dynamic, relational abilities that emerge in the transactions between participants. In other words, so-called rational entities cannot be understood as stable input-factors in innovation processes leading to a determined out-put. Nor for the relational factors focused on in this thesis, as both meaning and identities are under continuous development.

9.2 CONTRIBUTIONS

This study contributes to a small - but growing - research approach that focuses on living practice, where research interest is directed towards what happens in the transactions where meaning and meaning-makers co-constitute one another and are in the continuous process of becoming. Innovation-studies have to lesser extent addressed the relational aspects, at least not from the same ontology as in this thesis. This means that there is a lack of empirical material of how meaning making and learning develop through transactions in NPD-work. The contributions in this study are first and foremost connected to the provision of empirical material to the research on identity and meaning-making in NPD-work.

The study does not "prove" that identity and meaning-making is central for developing NPD-work. It rather gives empirical insight in *how* identity and meaning-making play a central part in NPD-work. In order to give insight in this it has been necessary to provide a broader picture of how NPD-work in practice develops, and how meaning and meaning-makers co-constitute one another in this work

Through studying NPD work across projects, processes, and products, this study contributes to a more nuanced and comprehensive understanding of how meaning develops and flows between numerous tasks and development processes. Hence, the study challenges the idea of focusing on one process or product alone when studying NPD work as this cannot capture how product development processes and projects co-constitute one another through the practical work.

As such, the study also gives broader insight in how products and projects can be interconnected to the extent that it is meaningless to separate between them. This understanding calls for another way of thinking profitability assessments in relation to products and projects, and for understanding the value one product or development process can have for other part of the development work or for the organization and its participants for that matter.

The study can contribute to "fill in some of the blanks" in innovation-studies. It is for example widely acknowledged that faults, mistakes and misunderstandings can be the source of radical innovations, but *how* it comes to use in practical NPD-work is only marginally touched upon. By taking a relational approach to understanding how faults and mistakes can be used, it becomes clear that although faults and mistakes can lead to inquiries and unintended exploration, the ability to make use of it is also dependent on relational abilities. In other words, who one can be and become in the situation influences on the ability to make use of the discoveries. And furthermore, the discoveries influence on who the participants become and thus their expectations towards the future.

Through focusing on the conducting of leadership tasks rather than on leaders as such the study has provided empirical insight in how participants enable and constrain both the work tasks and the ability to take necessary leadership initiatives for taking the work further. As such these findings can contribute to a wider empirical understanding of what leadership in NPD-work can be comprised of, and how transactional dynamics influence on the impact of the conducted leadership.

Based on the findings from the study might contribute to the debate on whether self-leadership and co-leadership are differing forms of leadership. Both leadership forms are needed, but findings in this study indicate no real ontological difference between co-leadership and self-leadership conducted alone and conducted in transactions with others, in contrast to what Wadel (2006) and Uhl-Bien and Graen (1992) suggested.

The study also contributes to further research on leadership through meaning-making in NPD work by providing guidance on what to focus on and address in transactions. This means that further studies might be less comprehensive in time spent in the field. Nevertheless, both identities and meaning are constantly under development. Consequently, any researcher must put in the time and effort it takes to develop identities with the informants so as to take their attitude toward interpreting the development of events.

An important contribution to practice in this study is the acknowledgment of, attention paid to, and respect for the "hidden work" that participants conduct, but about which they might be less consciously aware and less reflective regarding its function. The study can, to the extent that practitioners will make use of it, lead to better understanding of the role of Selves in the development of innovation work and thus the need for – and value of - participants taking on enabling leadership in transactions.

9.3 THEORETICAL, PRACTICAL, AND METHODOLOGICAL IMPLICATIONS

An implication for how we *think* about leadership through meaning-making in NPD work is the realization that NPD work develops across and on the work in numerous processes, projects, and work tasks. Focusing on the success or failure of a specific project or product in this understanding becomes meaningless because, for example, a product that was never launched can have a great impact on the development of "successful" products.

Furthermore, the idea that it is possible for someone alone to direct the development of events in NPD processes becomes problematic, as all participants must take their part in the leadership to realize the work. Intentions are also reconsidered as meaning develops, and all gestures made in the transactions contribute to these reconsiderations.

Implications for practice can be the following. To develop the NPD work across products, processes, and projects, the ability to discuss occurring events and unexpected outcomes across departments and disciplines is enabled by the physical proximity of participants, teams, and departments. This might be an argument against outsourcing or placing work functions physically distant from one another. Hence, separating so-called exploratory development teams from production and more incremental development teams can lead to less spurring of meaning across projects and NPD tasks and thus less cross-fertilization. However, physical proximity alone is not sufficient for fruitful transactions to take

place. The participants also need to develop shared understandings and identities, making it meaningful and natural to share ideas and discoveries with one another.

Another implication for practice is the question of whether it is fruitful to measure profitability and success in the NPD-work based on the profitability of the specific product. Such profitability-assessments might be useful for learning and for providing basis for discussions for what works or not. Nevertheless, they might be meaningless for representing profitability and loss more broadly as unsuccessful products can be more important for the development of future product successes that the successful products have been.

To conduct leadership in NPD work, one needs an understanding and consciousness of the interdependent dynamics of leadership. As leadership is so interdependent, it must be a central leadership task to socialize newcomers into becoming competent participants. This is a leadership task that hardly can be conducted solely by instructing newcomers about what to do and how to behave. It must be embodied through taking part in transactions, as the conducting of self-leadership and co-leadership is closely connected to the understanding of identity. Creating arenas for transactions in the work community across disciplines and work groups is then important for developing the relational competence needed to conduct the work and to take part in the conducting of leadership.

Upholding and developing identities is a continuous and central leadership act that needs to be conducted by everyone in their daily work. It is conducted through the numerous everyday transactions of participants where they enable and constrain one another through their responses to one another´s gestures.

If we want to understand the hidden work in how leadership is conducted in practice, we must shift our attention from leaders and formal strategies and procedures to acts that enable the work and influence the meaning and direction developing in the work. This means drawing attention to how the various tasks are conducted and how this

conducting of tasks can enable oneself and others to take the work further. Hence, attention must also be paid to situations where tasks do not go as expected to draw attention to aspects that might be taken for granted, but that are vital for conducting the work well.

Another central methodological implication is the need to take the time and effort to follow participants over time in their own work environment. The researcher must take part in the transactions over time and, to the extent that he or she can, take on the attitude of informants in the transactions in which the researcher takes part. This way, the researcher is able not just to interpret situations more in line with the participants, but also to notice the inquiries when things do not develop as expected.

Having a different background than the participants can also be fruitful for identifying differences in understandings of reality. However, that again will depend on the researcher being thoroughly socialized into the world of the participants as well as his or her "own world." Here I differ with Kleinsmann et al. (2007), as they recommended that product designers study product designers, claiming that they will have insight into the tacit knowledge of the trade. To my understanding, it is reflecting on the tacit knowledge one learns through socialization into the field and the understanding one brings from other "Me´s" that enable the researcher to grasp the tacit knowledge.

Researchers need to explore meaning in transactions as they develop, rather than solely interviewing participants in hindsight about what happened. This is because our understanding of the present and the past is under constant reinterpretation and this directs the expectations for the future that guide our actions. If we want to understand why people act as they do in a given situation, we need to understand the meaning in the current situation.

9.4 SUGGESTIONS FOR FURTHER STUDIES

This study is first and foremost an *empirical* study where a relational approach has been adopted in order to explore meaning-making in NPD-work. As such there are many thematic angles and theoretical approaches that also focus on human aspects of leadership and of innovation-processes, but that I have not found room for addressing in this thesis. Examples of such themes could be identity work within professions, communities of practice, shared leadership, the understanding of creativity and the understanding of leadership and followership. The work of Mead, Dewey, Elias and Wadel can be tools for exploring these themes and discourses further.

From this several questions for further research arise. First, is this way of organizing the NPD work with numerous products and NPD projects in parallel and with much informal contact across departments and disciplines more ordinary than we might think? Looking more closely at the occurrence frequency would be interesting.

Furthermore, can we find parallels between the findings in my study and other cases in other cultures and/or industries?

More research is also called for when it comes to how profitability in NPD-work is assessed and measured, and what this means for the decisions being made about what to do, what to develop and ideas and projects that should be abandoned.

REFERENCES

Aase, T. H., & Fossåskaret, E. (2007). *Skapte virkeligheter - kvalitativt orientert metode*. Oslo: Universitetsforlaget.

Aasen, J. (2006). *Tanke og handling: nøkler til pedagogisk filosofi*. Vallset: Oplandske Bokforlag.

Aasen, J. (2008). *Dewey: John Deweys pedagogiske filosofi*. Vallset: Oplandske Bokforlag.

Aasen, T. M. B. (2009). A complexity perspective on innovation processes for subsea technology development. *International Journal of Learning and Change, 3*(3), 18.

Adler, P. S., Benner, M., Brunner, D. J., MacDuffie, J. P., Osono, E., Staats, B. R., . . . Winter, S. G. (2009). Perspectives on the productivity dilemma. *Journal of Operations Management, 27*, 15.

Aldrich, H. E. (1999). *Organizations Evolving*. London: Sage Publications.

Alvarez, S. A., & Busenitz, L. W. (2001). The Entrpreneurship of Resource-based Theory. *Journal of Management Development, 27*(20), 21.

Anderson, D. R. (1987). *Creativity and the Philosophy of C.S. Peirce*. Dordrecht/Boston/Lancaster: Martinus Nijhoff Publishers.

Andriopolous, C., & Lewis, M., W. (2010). Managing Innovation Paradoxes: Ambidexterity Lessons from Leading Producft Design Companies. *Long Range Planning, 43*, 19.

Arbnor, I., & Bjerke, B. (1994). *Føretagsekonomisk metodlara* (2nd edition ed.). Lund: Studentlitteratur.

Archer, M. S. (1998). *Critical realism: essential readings*. London: Routledge.

Athens, L. (2002). "Domination" - The Blind Spot in Mead´s Analysis of the Social Act. *Journal og Classical Sociology, 2*(1), 18.

Bale, K., & Bø-Rygg, A. (Eds.). (2008). *Estetisk teori - an antologi*. Oslo: Universitetsforlaget as.

Barney, J. B., & Arikan, A. M. (2001). The Resource-Based View: Origins and Implications. In M. A. Hitt, R. E. Freeman & J. S. Harrison (Eds.), *The Blackwell Handbook of Strategic Management* (pp. 88). Oxford: Blackwell.

Bateson, G. (2000). *Steps to an ecology of mind*. Chicago: University of Chicago Press.

Bateson, G. (2002). *Mind and nature: a necessary unity*. Cresskill, N.J.: Hampton Press.

Bertels, T., & Savage, C. M. (1998). Though Questions on Knowledge Management. In G. von Krogh, J. Roos & D. Kleine (Eds.), *Knowing*

in Firms - Understanding, Managing and Measuring Knowledge. London - Thousand Oaks - New Dehli: SAGE Publications.

Blumer, H. (1969). *Symbolic Interactionism - perspective and method* (Paperback-edition, 1998 ed.). Berkeley, California: University of California Press.

Bohlmann, J. D., Spanjol, J., Qualls, W. J., & Rosa, J. A. (2012). The Interplay of Customer and Innovation Dynamics: An Exploratory Study. *Journal of Product Innovation Management, 30*(2), 15.

Brinkmann, S. (2006). *John Dewey. En introduction*. København: Hans Reitzels Forlag.

Brinkmann, S., & Tanggaard, L. (2010). Towards an Epistemology of the Hand. *Studies in Philosophy and Education*(29), 14.

Brower, H. H., Schoorman, D. F., & Tan, H. H. (2000). A model of relational leadership: The intergation of trust and leader-member exhange. *Leadership Quaterly, 11*(2), 33.

Brown, J. S., & Duguid, P. (1991). Organizational Learning and Communitities of Practice: Toward a Unified View of Wroking, Learning and Innovation. *Organization Science, 2*(1), 18.

Brown, J. S., & Duguid, P. (2001). Knowledge and Organization: A Social-Practice Perspective. *Organization Science, 12*(2), 16.

Brun, E., Sætre, A. S., & Gjelsvik, M. (2008). BENEFITS OF AMBIGUITY IN NEW PRODUCT DEVELOPMENT. *International Journal of Innovation and Technology Management, 5*(3), 16.

Brun, E. C. (2010). *Understanding and Managing Ambiguity in New Product Development - Lessons from the Medical Device Industry.* (Philosophiae doctor), NTNU, Norwegian University of Science and Technology, Trondheim. (66)

Buijs, J. (2007). Innovation Leaders Should be Controlled Schizophrenics. *Creativity and innovation management, 16*(2), 8.

Burgelman, R. A. (2002). *Strategy Is Destiny: How strategy-making shapes a company´s future*. New York: The Free Press.

Büschgens, T., Bausch, A., & Balkin, D. B. (2013). Organizational Culture and Innovation: A Meta-Analytic Review. *Journal of Product Innovation Management, 30*(4), 19.

Cardona, P. (2000). Transcendental leadership. *The Leadership & Organization Develoment Journal, 21*(4), 6.

Chakrabarti, A. K. (1974). The Role of Champion in Product Innovation. *California Management Review, 17*(2), 5.

Collier, A. (1994). *Critical realism: an introduction to Roy Bhaskar's philosophy*. London: Verso.

Cooper, R. G. (1993). *Winning at new products - Accellerating the Process from Idea to Launch*. New York: Perseus Books.
Creswell, J. W. (2007). *Qualitative Inquiry & Research-Design* (2nd Edition ed.). Thousand Oaks: SAGE Publications.
Cutcher, L. (2009). Resisting change from within and without the organization. *Journal of Organizational Change Management, 22*(3), 13.
Denzin, N. K., & Lincoln, Y. S. (Eds.). (2005). *The Sage Handbook of Qualitative Research* (3rd edition ed.). Thousand Oaks: Sage Publications.
DeRue, D. S., & Ashford, S. J. (2010). Who will lead and who will follow? A social process of leadership identity construction in organizations. *Academy of Management Review, 35*(4), 21.
Dewey, J. (1934). *Art as Experience*. New York: Berkeley Publishing Group.
Dewey, J. (1938). *Experience and Education* (first Touchstone Edition ed.). New York: Touchstone, Simon & Schuster Inc.
Drach-Zahavy, A., Somech, A., Granot, M., & Sptizer, A. (2004). Can we win them all? Benefits and costs of structured and flexible innovation-implementations. *Journal of Organizational Behavior, 25*, 18.
Elias, N. (1939). *The Civilizing Process*. Oxford: Blackwell.
Elkjaer, B., & Simpson, B. (2006). *Towards a Pragmatic theory of creative practice*. Paper presented at the Second Organization Studies Summer Workshop
Re-turn to practice: Understanding Organization as it Happens.
Ellonen, R., Blomqvist, K., & Puumalainen, K. (2008). The role of trust in organisational innovativeness. *Erupean Journal of Innovation Management, 11*(2), 22.
Engwall, M., & Westling, G. (2004). Peripety in an R&D Drama: Capturing the Turnaround in Project Dynamics. *Organization Studies, 25*(9), 21.
Ewenstein, B., & Whyte, J. (2007a). Beyond Words: Aesthetic Knowledge and Knowing in Organizations. *Organization Studies, 28*(05), 20.
Ewenstein, B., & Whyte, J. (2007b). Visual artefacts as "artefacts of knowing". *Building Research & Information, 35*(1), 9.
Ewenstein, B., & Whyte, J. (2009). Knowledge Practices in Design: The Role of Visual Representations as "Epistemic Objects". *Organization Studies, 30*(01), 24.
Fangen, K. (2004). *Deltakende observasjon*. Bergen: Fagbokforlaget Vigmostad & Bjørke as.
Figgjo format. (2009): Figgjo as.

Gilbert, B. A. (2012). Creative destruction: Identifying its geographic origins. *Research Policy, 41*(4), 734-742. doi: http://dx.doi.org/10.1016/j.respol.2011.11.005

Goffman, E. (1959). *The Presentation of Self in Everyday life* (The Anchor Books edition ed.). New York: Doubleday.

Gold, R. L. (1958). Roles in sociological field observations. *Social forces, 36*(3), 217-223.

Golden, T. D., & Veiga, J. F. (2008). The impact of superior-subordinate relationships on the commitment, job satisfaction and performance of virtual workers. *The Leadership Quaterly, 19*, 12.

Graen, G. B., & Uhl-Bien, M. (1995). Relationship-based approach to leadership: development of leader-member exhange (LMX(theory over 25 years: applying a multi-level multi-domain perspective. *Leadership Quaterly, 6*(2), 29.

Granovetter, M. S. (1973). The strength of weak ties. *American Journal of Sociology*, 1360-1380.

Griffin, D., & Stacey, R. (Eds.). (2005). *Complexity and the Experience of Leading Organizations*. Abingdon, Oxon: Routledge.

Hammersley, M., & Atkinson, P. (2004). *Feltmetodikk*. Oslo: Gyldendal akademisk.

Harkema, S. (2003). A complex adaptive perspective on learning within innovation projects. *The learning Organization, 10*(6), 7.

Hegel, G. (1807). *Åndens fenomenologi* (J. Elster, F. Engelstad, T. Krogh, T. I. Rørvik & D. Østerberg, Trans. Norwegian edition ed.). Oslo: Pax Forlag.

Hsieh, P.-F., Lee, C.-S., & Ho, J. C. (2012). Strategy and process of value creation and appropriation in service clusters. *Technovation, 32*(7–8), 430-439. doi: http://dx.doi.org/10.1016/j.technovation.2011.03.003

Johannessen, S., & Aasen, T. M. B. (2007). Exploring innovation processes from a complexity perspective Part 1: theoretical and methodical approach. *International Journal of Learning and Change, 2*(4), 13.

Johannessen, S. O. (2009). The complexity turn in studies of organizations and leadership: Relevance and implications. *International Journal of Learning and Change, 3*(3), 16.

Kanter, R. (1996). When a thousand flowers bloom: Structural, collective, and social conditions for innovation in organizations. *Knowledge Management and Organisational Design*, 93-131.

Karp, T., & Helgø, T. I. T. (2009). Leadership as identity construction: the act of leading people in organizations. *Journal of Management Development, 28*(10), 17.

Khurana, A., & Rosenthal, S. R. (1998). Towards holistic "front ends" in new product development. *Journal of Product Innovation Management, 15*(1), 57-74.

Kim, J., & Wilemon, D. (2002). Strategic issues in managing innovation´s fuzzy front end. *European Journal of Innovation Management, 5*(1), 13.

Kleinsmann, M., & Valkenburg, R. (2008). Barriers and enablers for creating shared understanding in co-design projects. *Design Studies, 29*(4), 18.

Kleinsmann, M., Valkenburg, R., & Buijs, J. (2007). Why do(n´t) actors in collaborative design understand each other? An empirical study towards a better understanding of collaborative design. *Co-design, 3*(1), 15.

Lester, R. K., & Piore, M. J. (2004). *Innovation - the missing dimension* (Paperback-edition, 2006 ed.). Cambridge, Massachusetts: Harvard University Press.

Lincoln, Y. S., & Guba, E. (1985). *Naturalistic Inquiry*. Beverly Hills, California: SAGE.

Lindland, K. M. F. (2008). *Ledelse som relasjonell istandsettelse*. Paper presented at the Neon, Tromsø.

Lindland, K. M. F. (2009a). *Product development as the social process of developing meaning - exploring how the physical object plays a part in the emergence of meaning and product language*. Paper presented at the 25th EGOS colloquium, Barcelona, Spain.

Lindland, K. M. F. (2009b). *Taking a relational route to understanding ambiguity*. Paper presented at the Stavanger Innovation Summit, Stavanger.

Lindland, K. M. F. (2011). *Title: Enabling through transactional situations: how re-interpretation of meaning and meaning-makers can enable us to find creative solutions in challenging times.* Paper presented at the 27th EGOS Colloquium, Gothenburg.

Lindland, K. M. F. (2013a). *Relasjonelle aspekter ved normative styringsmodeller*. Paper presented at the Neon, Bergen

Lindland, K. M. F. (2013b). *Utøving av profesjonsidentitet som istandsettende ledelse i samspill med andre*. Paper presented at the Neon, Bergen.

Magnusson, M., Boccardelli, P., & Börjesson, S. (2009). Managing the Efficiency-Flexibility Tension in Innovation: Strategic and Organizational Aspects. *Creativity and innovation management, 18*(1), 5.

Manz, C. C. (1996). Self-leadership: Toward an Expanded Theory of Self-Influence Processes in Organizations. *Academy of Management Review, 11*(3), 16.

Marshall, C., & Rossman, G. B. (2011). *Designing qualitative research*. Thousand Oaks, California: SAGE.

Martela, F. (2011). *Abductive mode of inquiry*. Paper presented at the 27th EGOS Colloquium, Gotherburg.

Mead, G. H. (1932). *The Philosophy of the Present* (2002 ed.): Prometheus Books.

Mead, G. H. (1934). *Mind, Self and Society*. Chicago: University of Chicago Press.

Mintzberg, H. (1996). Managing innovation. In H. Mintzberg, J. Lampel, J. B. Quinn & S. Ghoshal (Eds.), *The strategy process* (2003 ed., pp. 403-431). Essex: Pearson Education.

Mintzberg, H., Ahlstrand, B., & Lampel, J. (1998). *Strategy Safari*. Harlow: Pearson Education.

Mortensen, N. (2000). Amerikansk pragmatisme. In H. Andersen & L. B. Kaspersen (Eds.), *Klassisk og moderne samfundsteori* (2 ed.). København: Hans Reitzels forlag.

Nielsen, K., & Kvale, S. (Eds.). (1999). *Mesterlære - Læring som sosial praksis*. Oslo: Gyldendal Norsk Forlag as.

O´Connor, G. C., & DeMartino, R. (2006). Organizing for Radical Innovation: An Exploratory Study of the Structural Aspects of RI-management Systems in Large Established Firms. *Journal of Innovation Management, 23*, 24.

Ottesen, O. (2011). En referansemodell av endringsledelse. In O. Ottesen (Ed.), *Ledelse - å bruke teori i praksis* (pp. 25-80). Kristiansand: Høyskoleforlaget.

Penrose, E. (1959). *The Theory of the Growth of the Firm*. New York: Oxford University Press.

Putz, M., & Raynor, M. E. (2005). Integral leadership: overcoming the paradox of growth. *Strategy & Leadership, 33*(1), 3.

Quinn, J. B. (1985). Managing innovation: controlled chaos. *Harwards Busienss review, 63*(3), 12.

Rosenberg, U.-E. (2001). *FIGGJO - formet av entusiasme gjennom 60 år*. Figgjo: Figgjo as.

Rost, K. (2011). The strength of strong ties in the creation of innovation. *Reseach Policy, 40*(4), 17.

Rylander, A., & Peppard, J. (2003). From implementing strategy to embodying strategy: linking strategy, identity and intellectual capital. *Journal of Intellectual Capital, 4*(3), 316-331.

Røthing, Å. (2002). Om bare ikke informantene leser avhandlingen... Intervjuer med par, og forskningsetiske utfordringer. *Tidsskrift for samfunnsforskning*.
Schein, E. (1985). *Organizational culture and leadership. A dynamic view.* (H. Bang & P. Moxnes Eds. Norwegian edition ed.): Jossey-Bass Inc.
Schou-Andreassen, K., & Wadel, C. (1989). *Ledelse, teamarbeid og teamutvikling i fotball og arbeidsliv*. Flekkefjord: SEEK as.
Schuetz, A. (1944). The Stranger: An Essay in Social Psychology. *American Journal of Sociology, 49*(6), 9.
Schumpeter, J. (1934). *The theory of economic development*. Cambridge, MA: Harvard University Press.
Simpson, B. (2009). Pragmatism, Mead and the Practice Turn. *Organizational Studies, 30*(12), 19.
Skivik, H. M. (2004). *Relasjonell ledelse* (first edition ed.). Oslo: Gyldendal Norsk Forlag as.
Smircich, L., & Morgan, G. (1982). Leadership: The management of meaning. *Journal of Applied Behavioral Science, 18*(3), 257-273.
Stacey, R. (2003). *Complexity and Group Processes*. London: Routledge.
Stacey, R. (2007). The challenge of human interdependence. *European business Review, 19*(4), 10.
Takeuchi, H., & Nonaka, I. (1986). The new new product development game. *Harward Business Review*(January-February), 10.
Taylor, F. W. (1911). *The Principles of Scientific Management*. New York: Harper.
Thagaard, T. (1998). *Systematikk og innlevelse*. Bergen: Fagbokforlaget Vigmostad & Bjørke AS.
Thurén, T., Gjestland, D., & Gjerpe, K. (2009). *Vitenskapsteori for nybegynnere*. Oslo: Gyldendal akademisk.
Trueman, M. (1998). Managing innovation by design - how a new design typology may facilitate the product-development process in industrial companies and provide competetive advantage. *European Journal of Innovation Management, 1*(1), 13.
Uhl-Bien, M. (2006). Relational Leadership Theory: Exploring the social processes of leadership and organizing. *The Leadership Quaterly, 17*, 23.
Uhl-Bien, M., & Graen, G. B. (1992). Self-Management and Team-making in Cross-functional Work Teams: Discovering ther Keys to Becoming an Integrated Team. *The Journal of High Technology Management Research*
3(2), 17.

Uhl-Bien, M., & Marion, R. (2009). Complexity leadership in bureaucratic forms of organizing: A meso model. *The Leadership Quaterly, 20*, 20.

Uhl-Bien, M., Marion, R., & McKelvey, B. (2007). Complexity Leadership Theory: Shifting leadership from the industrial age to the knowledge era. *The Leadership Quaterly, 18*, 21.

Van de Ven, A. H., Polley, D. H., Garud, R., & Venkataraman, S. (Eds.). (1999). *The Innovation Journey*. Oxford: Oxford University Press.

Verganti, R. (2006). Design-Inspired Innovation and the Design-Discourse. In J. Utterback, B. A. Vedin, E. Alvarez, S. Ekman, S. W. sanderson, B. Tether & R. Verganti (Eds.), *Design-Inspired Innovation*. Singapore: World Scientific Publishing Co.

von Krogh, G., Ichijo, K., & Nonaka, I. (2001). *Slik skapes kunnskap*. Oslo: NNKS forlaget.

Wadel, C. (1991). *Feltarbeid i egen kultur*. Flekkefjord: SEEK as.

Wadel, C. (1999). *Kommunikasjon - et mangfoldig samspill*. Flekkefjord: SEEK as.

Wadel, C. C. (2006). Om å lede seg selv sammen med andre. Selvledelse i medarbeidersamhandling. *Sosiologi i dag, 36*(1), 19.

Wadel, C. C. (2007). *Medarbeidersamhandling og medarbeiderledelse i en lagbasert organisasjon.* (Dr. Philos. Degree), Universitetet i Bergen, Bergen.

Wadel, C. C. (2012). Ledelse i et interaksjonsperspektiv. *Sosiologi i dag, 42*(2).

Weber, M. (1922). *Makt og byråkrati* (Norsk utgave ed.). Oslo: Gyldendal norsk forlag.

Weick, K. (1995). *Sensemaking in Organizations*. Thousand Oaks, California: SAGE Publishing.

Wenger, E. C., & Snyder, W. M. (2000). Communities of Practice: The Organizational Frontier. *Harward Business Review*(1), 7.

Werbel, J. D., & Henriques, P. L. (2009). Different views of trust and relational leadership: supervisor and subordinate perspectives. *Journal of management Psychology, 24*(8), 17.

Yin, R. K. (2003). *Case study research: Design and methods* (3rd edition ed. Vol. 5). Thousand Oaks: Sage Publications.

Yukl, G. (1989). *Leadership in Organizations* (6th edition ed.). Upper Saddle River: Pearson Prentice Hall.

Zaltman, G., Duncan, R., & Holbæk, J. (1973). *Innovation and organizations*. New York - London: John Wiley & Sons.